JOURNAL

of the

INDIAN MEDICAL ASSOCIATION

VOLUME 31 NUMBER 4 CALCUTTA AUGUST 16, 1958

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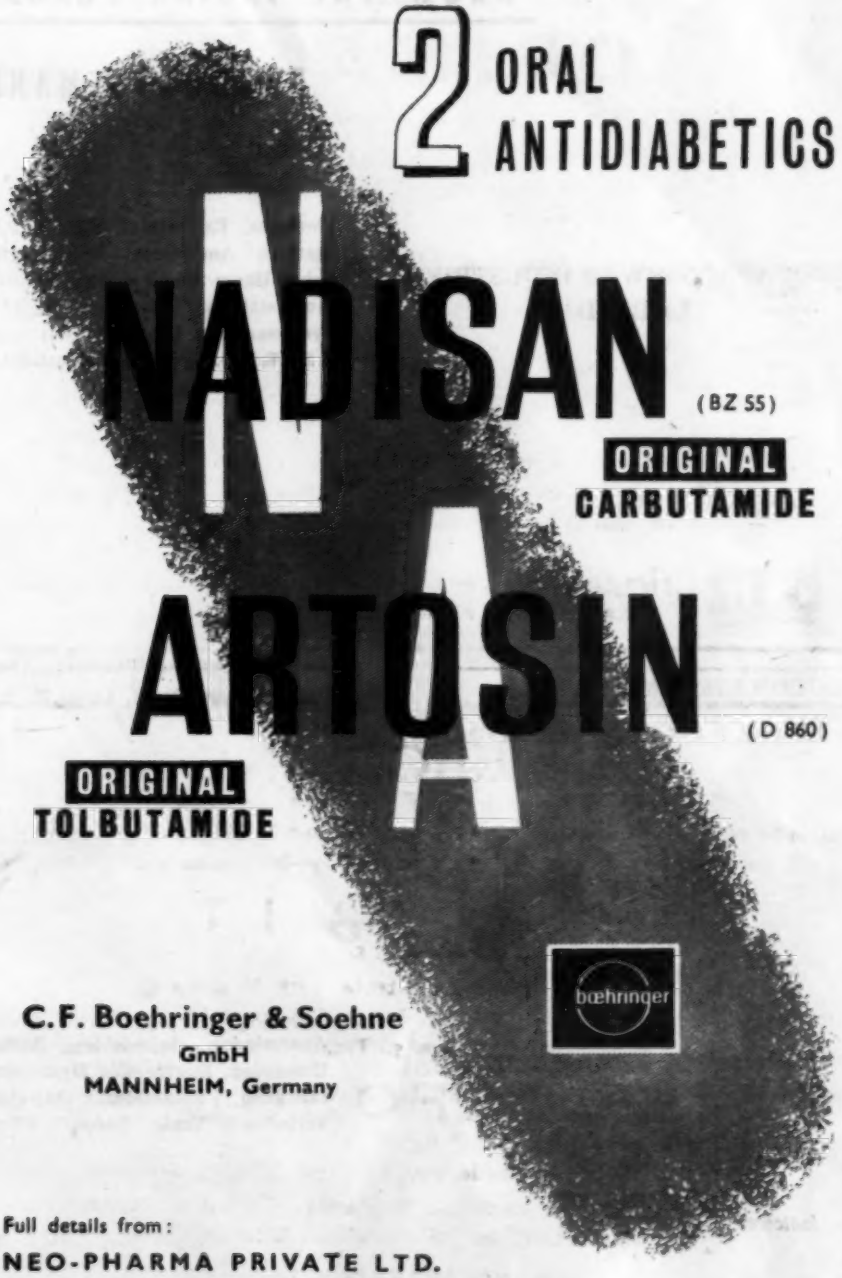

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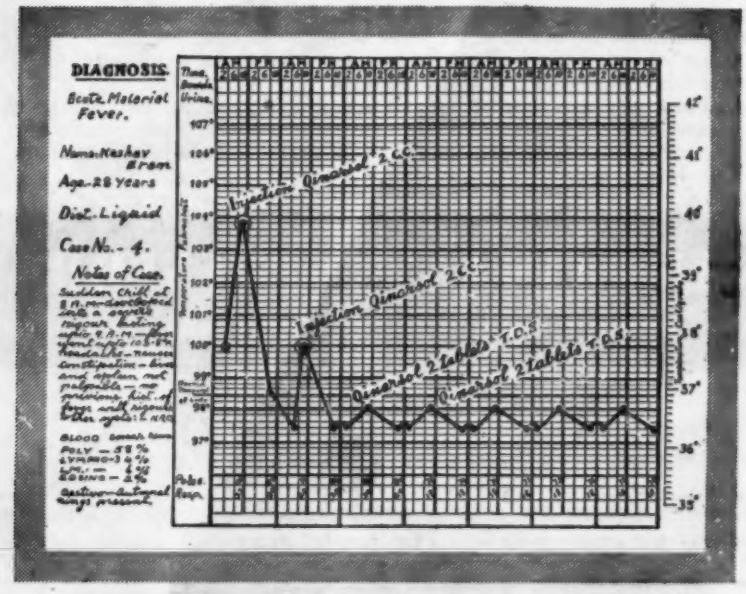

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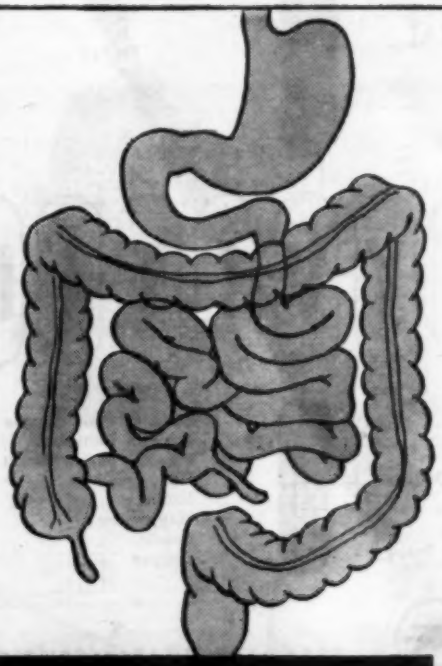

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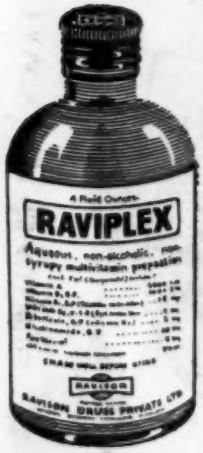

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I.24

Fat and the daily diet

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By contributing a large amount of energy, fat relieves the intestinal tract of the necessity for dealing with an excessive amount of carbohydrate food, and to a certain extent, it spares protein. It also aids in the digestive functions and favours absorption of fat soluble factors. Fat is also included in the diet for its flavour, lubricant action and 'satiety value' which Werner has particularly stressed.

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Fat is also included in the diet because it can act as a carrier of fat-soluble vitamins A and D. Lack of Vitamin A is the single factor responsible for a large number of deficiency diseases. In some parts of the tropics, deficiency of Vitamin A is quite high. Lack of Vitamin D causes rickets. According to Health Bulletin No. 23 (a Government of India publication), minor degrees of rickets are probably more common in Indian infants and young children than is generally believed.

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REFERENCES—Werner S.C.: New Eng. J. Med., *252*, 661.
Langworthy C.F.: Ind. Eng. Chem., *1923*, 276.
Deuel H.J. (Jr.): J. Nutr. *1955*, 337.
Alfin-Slater R.B., Wells A.F., Aftergood L. and Deuel H.J. (Jr.): J. Nutr. *1957*, 241.

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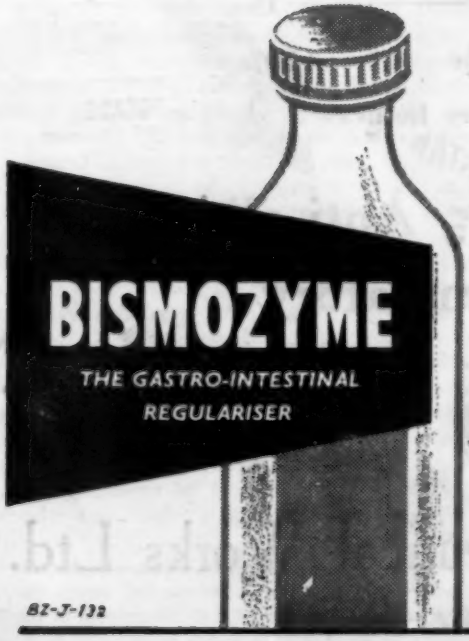

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Journal of the Indian Medical Association

VOLUME 31
NUMBER 4

PUBLISHED TWICE A MONTH
EDITOR—P. K. GUHA, M.B., M.R.C.S. (ENG.), D.O.M.S. (LOND.)

CALCUTTA
AUGUST 16, 1958

ORIGINAL ARTICLES

OSTEO-ARTICULAR LESIONS IN SMALLPOX

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Smallpox is caused by virus infection and is characterised by generalised pustular eruptions which on healing leave scars. Osteomyelitis and arthritis sometimes complicate the disease and present special features.

The incidence of osteo-articular lesions following variola is, however, small. Chatterjee (1950) reported 10 such cases from N.R.S. Hospital, Calcutta, during the 1948 epidemic and recorded an incidence of 0·43 per cent. Devitalised and ill-nourished children under 12 years of age are mostly affected. Arthritis of larger joints generally occurs during the pustular stage or later during desquamation of the scabs (Osler and McCrae, 1919) and is characterised by pain, swelling and fever. Affection of bone with abscess formation may also occur, resembling pyogenic osteomyelitis. Isolated osseous affection is rare. Narasimhan (1940) noted two clinical varieties: (1) A suppurative type leading to abscess, osteomyelitis and arthritis due probably to secondary infection; (2) Non-suppurative type characterised by mild clinical features and radiological evidence of bone necrosis of epiphysis and metaphysis causing epiphyseal damage with resultant development of late deformities simulating Brown and Brown's 'osteomyelitis variolosa' (1923).

In India osteoarticular lesions are often seen and since these lesions have not been adequately described in literature, it was thought worthwhile to study such cases in detail with a view to elucidate the aetiopathological aspects of the condition. Results of treatment are also recorded.

MATERIALS AND METHOD

Twelve cases of smallpox with osteo-articular lesions were studied in the present series. Patients were investigated and followed in the orthopaedic department of the Medical College Hospitals, Calcutta, during the period of from January 1957 to December 1957. Nine of these cases were in subacute stage, 2-6 months after desquamation of scabs, and 3 were late cases, 1-12 years after the attack of smallpox. Histological examination was done from biopsies of bone, muscle and joint capsule and synovial membrane in the subacute type of cases. Tissues removed at biopsies were also cultured. Radiological examinations of the affected parts were made. Histopathological examinations were not made in the three late cases. Preliminary observations on ten of these cases were reported earlier (Bose, 1958).

Treatment consisted of plaster cast immobilisation for 4-6 weeks in tense and swollen joints (5 cases), partial excision of the elbow (2 cases), curettage of osseous lesions (1 case), sequestrectomy (1 case), corrective osteotomy for genu valgum (1 case) and free active use with physiotherapy (2 cases).

CASE REPORTS

Case 1—S.A., a 4 year old male child, presented with swelling of both elbows, both knees and right ankle 6

months after an attack of smallpox. X-ray showed cystic changes of the bone ends of the affected joints. Culture was sterile and biopsy findings were of subacute type. The patient was treated by partial excision of the left elbow and plaster cast immobilisation of other joints for 4 weeks followed by active use. The result was more or less the same in both elbow joints giving a range of movement of 130°-70°. Compared to elbow joints the restoration of function in other joints were most satisfactory.

Case 2—B.M., a 6 year old male child presented 3 months after an attack of smallpox with affection of the right elbow and involvement of both eyes. Clinical and x-ray findings were the same as in Case 1. Culture was sterile. The case was treated like Case 1 by partial excision with ankylosis at 100°. Fig. 1 (*vide* Plate) shows healed incision mark for biopsy over the right elbow which was swollen and photophobia of both eyes.

Case 3—R.B., 1½ year old female child, presented with swelling of both elbows. Clinical, x-ray and laboratory findings were as in Cases 1 and 2. The case was treated by plaster cast immobilisation for 4 weeks followed by active use with return of 120°-70° movement.

Case 4—M.M., a 12 year old female child, presented 6½ years after an attack of smallpox, with affection of both elbows. X-ray showed epiphyseal damage. Culture and biopsy were not done. With physiotherapy and active use, there was improvement in joint function by 10°-15°.

Case 5—L.C., a 8 year old male child, presented 2½ years after an attack of smallpox with affection of both elbows and the right knee. Clinical, x-ray and laboratory findings were similar to those in Case 1. Treatment and results were similar to those in Case 3.

Case 6—B.D., a 2 year old female child, reported 2 months after an attack of smallpox with bilateral elbow affection. Clinical, x-ray and biopsy findings were similar to those in Case 1. Treatment and results were the same as in Case 3.

Case 7—C.R., a 9 year old female child, presented with ankylosis of both elbows and sinus in both forearms one year after an attack of smallpox. X-ray showed bony ankylosis of both elbows and cystic changes with sequestra. With sequestrectomy the wound healed.

Case 8—N.M., a 15 year old boy, reported one year after an attack of smallpox with affection of the right shoulder region. Abduction and external rotation were limited to the last 15°-20°. X-ray showed cystic appearance of the scapula. Culture and biopsy were not done. With active use and exercise improvement occurred.

Case 9—T.A., a 12 year old male child, presented 9 months after an attack of smallpox, with pure osseous affection of the upper and lower ends of both tibia and fibula of both sides. Culture was sterile. The patient was treated by curettage with good results.

Case 10—R.D., a 10 year old male child, reported with involvement of both elbows six months after an attack of smallpox. Clinical, x-ray and histopathological findings were like Case 1. Treatment and results were the same as in Case 3.

Case 11—K.K., a 14 year old boy, reported with affection of the left knee and both elbows 12 years after an attack of smallpox. 120°-60° range of movement in both elbows was present with genu valgum deformity in the knee for which osteotomy was done resulting in full movement of the knee.

Case 12—K.B., a 4 year old female child, reported 5 months after an attack of smallpox, with involvement of both elbows and left tibia in its upper third (osseous lesion). Clinical, x-ray and histological findings were like those in Case 1. The patient was treated with cast with satisfactory results.

Observations

Clinical findings—Nine of the cases were in subacute condition and resembled pyogenic arthritis and osteomyelitis. Bilateral involvement and the affection of elbow joints were marked features. Sinus formation was present only in Case 7. Two late cases showed growth disturbances of involved joint but were associated with presence of surprising range of movement. Bony ankylosis followed sinus and secondary infection (Case 7).

Radiological observations—The x-ray appearance of bone in subacute cases resembled chronic pyogenic osteomyelitis but differed in that the ends of bones forming the joint were affected. It seemed to have a special appearance of its own. Small cystic changes and subperiosteal bone formation without sequestra and without marked necrosis and new bone formation were more or less characteristic (Figs. 2 & 2A, *vide* Plate). Another important observation was that both epiphysis and metaphysis were involved along with joints. Isolated bone involvement was present in Case 9. Sequestra and the typical picture of osteomyelitis were present in Case 7 (Fig 3, *vide* Plate). Joint changes were separation of space, erosion of articular ends with moderate periarticular soft tissue swelling. In late cases, the joint space was diminished with deformed articular ends (Case 4) (Fig. 4, *vide* Plate) and unequal growth causing valgus deformity (Case 11) (Fig. 5, *vide* Plate).

Laboratory investigations—Direct microscopic examination of the aspirated material and tissues removed at biopsy showed a few degenerated cells and no micro-organisms. Routine culture of the aspirated material was sterile.

Biopsy—On macroscopic examination, the tissues were swollen and oedematous. The epiphyseal cartilage was necrosed. The bone ends were softened and cystic, full of a whitish thick gruel-like material.

The bone changes simulated osteitis fibrosa. Muscles showed fibrosis with focal round cell in-

filtration and loss of striations. The capsule and the synovial membrane showed evidences of fibrosis and round cell infiltration (Fig. 6, *vide* Plate).

Treatment

The pure osseous lesions healed after curettage and scraping (Case 9). In lesions of osteo-articular type (Case 1) partial excision of the elbow joints gave satisfactory movements while in another case (Case 2) this was a failure. Corrective osteotomy for genu valgum was successful in Case 11. Sequestrectomy was done in and antibiotic treatment given to Case 7. Physiotherapy and active use in two late cases (Case 4 and 8) improved the range of movement in the joints affected. The other comparatively early cases with swollen and tense elbow joints (Cases 3, 5, 6, 10 and 12) improved with plaster of Paris cast immobilisation and general supportive treatment.

Follow-up—Follow-up of the cases showed a gradual improvement in movements of joints with no recurrence of inflammation as usually occurs in chronic pyogenic infection of bone. Complete restoration of joint function specially in elbows was not attained in any of the cases. The extent of damage and ultimate disability were most marked in elbow joints.

Discussion

A review of literature showed discrepancy of results of culture of aspirated material in smallpox. Anderson (1948) found staphylococcus and streptococcus in blood culture. Jeans *et al* (1944) found staphylococcus in pus from the pustule. Chatterjee (1950) found sterile fluid in some of his cases. Kini and Keswabswami (1941) and Banerjee (1952) ascribed the lesions to secondary infection which usually occurs in scabs of some cases. Narasimhan (1940) stated that the lesions were specific and due to focal necrosis. Autopsy reports of Chiari (1893) recorded that the lesions were non-suppurative, sterile, necrotic foci. Musgrave and Sissons (1910 and 1913) also published autopsy and case reports. Debeyre (1903) said that osteomyelitis complicating smallpox rarely ended in suppuration. Brown and Brown (1923) reported that the lesions were non-suppurative affecting epiphyses. Cathcart (1924) asserted that smallpox bone lesions were specific. Eikenbary and Lecocq (1931) concluded that the virus apparently affected the epiphyseal lines of bone. Köhler (1935) observed that the lesions were non-purulent and necrotic. According to Harris and Mitman (1947) devitalisation of the tissues and breakdown of the natural resistance was the cause of the lesions. Wright (1954) ascribed the varied pathology in virus infection due to the different strains of virus and to tissue reactions. Bertcher (1956) described osteomyelitis variolosa as a specific bone disease.

These various reports of different authors can be explained by the fact that lesions of smallpox sometimes are secondarily infected by various organisms during pustular stage, even causing bacteriaemia and septicaemia. The question remains whether the osteo-articular changes are due to secondary infection or to the basic viral infection. In the present study no direct evidence of secondary infection was obtained, probably because none of the cases except one (Case 7) had any sinus. That particular case showed features consistent with pyogenic infection. The role of virus can, however, be neither established nor excluded by the present study but there seems to be a possibility. More elaborate study with modern techniques may show whether these osteo-articular lesions are due to viral infection.

Summary

Observations on osteo-articular lesions in 12 cases of smallpox are presented. The clinical picture resembled pyogenic infection in the subacute stage. Ankylosis and deformity of the affected joints were features in late cases. The skiagram was characteristic in subacute cases with cystic changes in the epiphysis and the metaphysis of bones forming the joints. Late changes were epiphyseal distortion. Routine cultural examinations of the aspirated joint fluid as well as of the degenerated tissues removed as biopsy were sterile. Histopathology showed bone changes like osteitis fibrosa. Treatment of the cases and their results are reviewed.

Acknowledgments

My thanks are due to Dr. S. C. Bose, Principal and Superintendent, Medical College Hospitals, Calcutta, for permission to use the records and to Professors K. Sarbadhikari, S. Mukherjee and S. N. De and staff of the departments of Orthopaedics, Radiology, and Pathology for co-operation in the work. I am indebted greatly to Dr. J. B. Chatterjea, Professor of Haematology, School of Tropical Medicine, Calcutta, for suggestions in the preparation of this paper.

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SURVIVAL OF *V. CHOLERAE* AND OTHER INTESTINAL PATHOGENS IN WATER

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In any waterborne bacterial disease, the growth and survival of bacteria in question in the water supply of the area is of primary importance. There are various factors that determine the growth and survival of an organism when it finds its way into any water source. Of these, the most important ones are: the nature of the organism, pH of the water, organic and inorganic contents of water, prevalent atmospheric temperature, presence of bacteriophage in water, and pre-existent bacterial flora of water exerting synergistic or antagonistic effect on the newcomer (Sarkar and Tribedi, 1953). In laboratory experiments on this problem, the number and age of the inoculated organism are additional important factors.

In our previous communication (Sarkar and Tribedi, 1954), it was shown that pH of the water of the Hooghly river and of water of ponds in Calcutta and Burdwan throughout the year remain very suitable for growth and survival of *V. cholerae*. The present work was planned to find out the relative efficiency of different samples of water obtained from common sources of water supply in Calcutta to maintain the viability of different intestinal pathogens under laboratory conditions. As quite a number of bacterial species form the normal bacterial flora of water of different natural sources, and as the seasonal variation of that bacterial flora is unpredictable, it was decided to make the water samples bacteria-free by filtration. So the complicated phenomenon of antagonism by other bacteria, which occurs in nature, is not taken into consideration in this work. By filtration, pH, dissolved organic and inorganic matter and bacteriophage content of water remained least affected; but the samples differed from the natural water in respect of being free from any bacteria.

METHOD AND MATERIALS

Water from the following sources was used in this work: the Hooghly river in Calcutta, a pond in Tollygunge, tap water of Calcutta Corporation and a tube well at Tollygunge. The water of this particular pond was greenish in colour due to the growth of algae. Water was collected in sterile bottles in the morning of the day of work, and pH of the samples was estimated by Hellige comparator after the samples had been filtered. Filtration was carried out by L_3 candles of Pasteur-Chamberland type. Autoclaved distilled water (prepared in a metal apparatus) was added to the list of samples of water to see how long the organisms lived in water free from organic matter.

The bacteria that were used in this work were *E. coli*, *S. typhi*, *S. para* A., *S. para* B., *Sh. shigae*, *Sh. flexneri*, *B. faecalis alkaligenes*, *V. cholerae* (Inaba in the first two experiments and Ogawa in the third), and non-agglutinating vibrio isolated from water. One 2 mm. loopful of 24 hours' broth culture of these organisms was put in 4-5 c.c. of water in small sterile test tubes ($4'' \times \frac{1}{2}''$) and the tubes were incubated at 37°C. Each day, after the tubes were shaken, a loopful was subcultured in MacConkey plate (and 0·5 per cent bile salt agar plate in case of *V. cholerae* or NAG) and growth or no growth was observed after 24 hours' incubation.

The tests were repeated three times during the course of 5 months (February to June). The water samples were collected each time and the strains of organisms were also changed in each test.

RESULTS

The number of days of survival of bacteria in different samples of water (with their pH) in the three tests is shown in Table 1.

TABLE 1—SHOWING NUMBER OF DAYS OF SURVIVAL OF BACTERIA IN DIFFERENT WATER SAMPLES (WITH THEIR pH) IN THE THREE TESTS

Bacteria	SOURCES OF WATER WITH pH														
	Tap			Tube-well			Pond			Hooghly river			Distilled water		
	8·1	8·1	8·4	7·7	7·8	8·1	8·6	8·6	8·5	8·1	8·1	8·3	7·5	7·5	7·6
Sh. shigae	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sh. flexneri	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
E. coli	2	1	2	4	3	11	5	1	8	1	4	5	11	10	15
S. typhi	<1	<1	2	<1	<1	<1	<1	<1	11*	2	<1	<1	<1	<1	1
S. para A	1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	7	<1	<1	6
S. para B	<1	2	11	17	17	18	2	3	3	2	1	12*	5	5	14
B. faec. alk.	5	<1	5	5	<1	10	<1	3	11	5	<1	13	<1	<1	2
V. cholerae	<1	<1	11	<1	<1	16	2	<1	6	18	20	12	<1	<1	<1
NAG	<1	<1	13	17	17	20	5	13	9	21	20	12	<1	<1	<1

* The organisms became rough from the first day of subculture.

DISCUSSION

From Table 1, the following comments can be made:

E. coli and *S. para* B survive a distilled water longer than any other organism. In fact, these two organisms, along with *B. faecalis alkaligenes* are able to survive in almost all types of water.

Dysentery organisms are characterised by their inability to live in all types of water supply.

Tap water, except when its pH is fairly high, does not support any of the above organisms to live.

Tube well water is good for survival of non-agglutinating vibrio (NAG) but not for *V. cholerae* except when its pH is above 8·0.

The ability of the Hooghly river water to support the cholera vibrio and NAG is remarkable. The samples of water in the test tubes dried up towards the end of the observation period; otherwise, probably, the survival would have been longer. This high survival rate is important in a city like Calcutta, where people use, or come in contact with, Hooghly river water in various ways in their everyday life.

Vibrio cholerae is an organism which has some characteristic features. It is an acid producing organism having high alkali tolerance (Sarkar and Tribedi, 1954). Its sensitivity to pH alteration is probably much more than any other intestinal bacteria. Recently Shrewsbury and Barson (1957) have shown, how in a synthetic well water of pH 8, *V. cholerae* lived for 77 days, whereas in the same water of pH 7 and 9, it lived only for 3 days (the volume of the water used in their experiments being much bigger than that in our experiment). No other intestinal pathogen in their experiment was found to be affected so much by pH alteration.

The pH of round about 8·0, which the Hooghly river water has throughout the year and which is attained by water of ponds in West Bengal in summer (Sarkar and Tribedi, 1954), seems to be most favourable for *V. cholerae* to survive. The pH of pond water in the present experiment became too alkaline due to the growth of algae, and probably for that reason, pond water could not maintain the viability of *V. cholerae* for a long period.

The samples of water used in the present experiment deviated from these as they occur in nature, by its being made bacteria free; yet the present work shows the influence exerted by the pH of water in the growth and survival of *V. cholerae*, and probably therefore, on the epidemicity and endemicity of cholera.

CONCLUSION

The ability of the Hooghly river water to support the viability of cholera vibrio and non-agglutinating vibrio is remarkable.

Tap water, except when its pH is fairly high, does not support any of the intestinal pathogens to live.

Dysentery organisms are characterised by their inability to live in all types of water supply in Calcutta area.

Tube well water is good for survival of NAG, but not for *V. cholerae* except when its pH is above 8·0.

ACKNOWLEDGMENTS

I am indebted to Prof. D. C. Lahiri of School of Tropical Medicine, Calcutta, for his advice and suggestions. I thank Prof. M. N. Lahiri of All-India Institute of Hygiene and Public Health, and Prof. S. N. De of Calcutta Medical College for their help in this work.

I am grateful to our Director, Prof. R. N. Chaudhuri, for giving me all facilities of work and for his constant encouragement in cholera research.

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MASTOID SURGERY TECHNIQUE FURTHER IMPROVED*

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INTRODUCTION

In view of some of the recent developments in the mastoid surgery for suppurative as well as for non-suppurative conditions of the ear, this paper has been brought out after the personal observations and experiences of the authors in dealing with two main and rather intricate problems of surgical procedures taken up during the treatment of resistant and complicated types of chronic suppurative otitis media. These are: (1) eradication of mastoid and middle ear disease and (2) preservation and restoration of hearing for rehabilitation purposes.

The classical radical surgery of the mastoid first described by Stacke has so far been undertaken not for the relief of deafness but for the cure of chronic suppurative otitis media and its complications which if left to have their own course, are a constant menace not to hearing alone but to life as well.

There has been a general belief that a thorough radical mastoidectomy could be done only at the sacrifice of the hearing of the patient.

Any gain in hearing if noted after radical mastoidectomy was possible through special healing conditions by which the oval and the round windows may have different pressures and elasticity.

This is achieved by the new surgical method also known as tympanoplasty which was first reported by Zöllner, a German otologist, who described the principles of plastic surgery of the sound conducting apparatus and reported successful results in 53 cases in the International E. N. T. Conference at Amsterdam in 1953.

TECHNIQUE

Leaving the minor details aside some of the chief peculiarities of the operation practised by us are being mentioned:

(1) In almost all the cases endaural route was used except in a few cases where there was a previously existing mastoid sinus or the external auditory canal was stenosed, inflamed or filled with a big aural polyp where a posterior aural route was considered as suitable. The endaural approach which, in itself, is an improvement in mastoid surgery, facilitates the proper exposure of the middle ear.

The use of mallet and gouges was made in all cases supplemented in some by the electric drill.

Cawthorne loup glasses and operating microscope were made use of for magnification. The loupe glasses gives double magnification and the operating microscope upto 10 diameter.

Continuous irrigation and electric suction was carried out instead of mopping the operated cavity with gauze pieces. This procedure avoided injury to the vital structures in the operative field.

The full thickness skin graft used for reconstruction of the middle ear was taken from behind the ear.

A small air space was created near the round window by placing a small piece of gelfoam or spongiostan under the skin flap. This air space acted as buffer for sound vibrations.

After exposing the antrum and aditus and removing the outer wall of the attic all over hanging bony projections and spicules were chiselled out and the facial ridge lowered to the utmost, particularly the bony spur on its medial aspect to ensure the wide exposure of the middle ear structures.

All unhealthy endosteum particularly in the regions of oval window and stapes, promontory and the mouth of eustachian tube was removed. This step generally overlooked was considered as essential as it reduced the incidence of post-operative recurrence of ear discharge and of the regrowth of exuberant granulations.

Our procedure and technique for the reconstruction of the middle ear, though based on principles set out by Zöllner, varied upon the pathology met with at the time of operation.

* Based on a paper read at the 21st Conference of the U.P. State Branch of the Indian Medical Association, Agra, October 1957.

These were dealt with and grouped under the following heads:

(I) *Giving a columella-like effect to the ear-reconstruction with only one ossicle, viz., Stapes left in situ in the new middle ear.* —This has been followed from a frog's ear which contains only one long slender ossicle known as columella in its middle ear. This ossicle extends from the tympanic membrane to the oval window and it conducts the sound vibrations to the inner ear quite efficiently.

In cases reported under this heading, malleus and incus, if present and found eroded or dislocated, were removed. Stapes if healthy and mobile was retained. Then a full thickness skin graft 2 cm. × 1½ cm. from behind the operated ear was spread over the medial wall of the middle ear to act as a new tympanic membrane thus creating a new middle ear containing only one ossicle, stapes, and enclosing the round window and the eustachian tube under it.

(II) *Reconstruction of middle ear with baffling or increasing the impedence of the round window* —In this group all the three ossicles had to be removed and the reconstruction was done by baffling (shutting off) the round window. A small piece of full thickness skin graft was used to cover the round window and the eustachian tube only leaving the oval window free to directly receive and conduct the sound vibrations.

(III) *Reconstruction of the middle ear by fenestration and baffling of the round window*— Whenever after removing the malleus and incus, the stapes was found to be fixed, ankylosed or stiffened as a result of chronic inflammatory changes in the middle ear or due to new bone formation round its foot-plate as in *'otosclerosis'*, a new fenestra was made in the dome of the lateral semicircular canal. Hearing improvement in such cases was possible due to shutting off the round window. The sound vibration striking on this new membrane bypass the closed oval window and is transmitted through the new fenestra into the inner ear.

(IV) *New middle ear with 2 ossicles*—In cases where incudostapedial joint was intact and the vibrating continuity present, the operation was limited to attico-antrotomy only (Fig. 1). Malleus in such cases was found to be absent or destroyed with the destruction of tympanic membrane.

The new skin flap was laid on incus. This middle ear was reconstructed with 2 ossicles, incus and stapes, within it.

Progress

All cases went through uneventfully.

The average period of hospitalization was about a fortnight after operation.

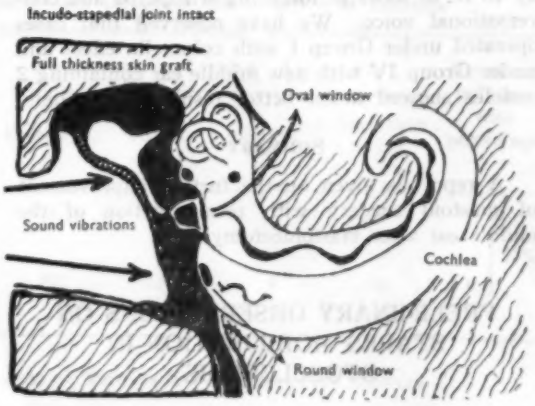

Fig. 1—Reconstruction of Middle Ear with Two Ossicles (Operation—Attico-Antrotomy)

In some cases who had postoperative ear discharge, 4 or 5 intratympanic medications by polythene tube through the eustachian catheter with sulphanilamide or chloramphenicol topical *via* eustachian tubes managed to improve the condition of the flap and to make the ear dry.

Results

We have done more than 50 such operations so far but at the moment we have facts and figures only of 44 cases because some cases recently operated are still in the wards and their results are being awaited.

To compare our results, we took a series of control cases in whom the old-styled mastoidectomies were performed without making any attempt to reconstruct the middle ear by plastic methods for the improvement of lost hearing.

The test materials used for hearing were conversation and pure tone audiometer.

	New-styled operation			Old-styled operation		
	No. of cases	Improved	Per cent	No. of cases	Improved	Per cent
Hearing ...	44	31	70	22	12	54·5
Ear discharge ...	44	38	86·4	22	10	45·4

Out of 31 who showed improvement, 22 cases improved by 20 decibels or more as recorded by their audiogram and 25 showed gain in hearing

by 10 ft. or more in following whispered and conversational voice. We have observed that cases operated under Group I with columella effect and under Group IV with new middle ear containing 2 ossicles showed much better results than others.

SUMMARY

A report is given on the further improvement of mastoid surgery with reconstruction of the middle ear after mastoidectomy.

PRELIMINARY OBSERVATIONS ON STAPES MOBILISATION IN OTOSCLEROSIS

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INTRODUCTION

Otosclerosis is a progressive type or deafness. It usually starts at about puberty and occurs more commonly in females than in males. Toynbee in 1841 first demonstrated that it is caused by the ankylosis of the stapedial foot plate to the margin of the oval window. Consequently the aero-ossicular vibrations fail to induce the peri- and endolymphatic flow which are essential to stimulate the hair cells of the organ of Corti and also the nerve impulse to be carried by the auditory nerve to the hearing centre of the brain. The symptoms of deafness and tinnitus are more aggravated during pregnancy and lactation and are known to have progressed after every childbirth.

Pathology—The bony changes in otosclerosis are found at the site of predilection, i.e., anterior end of the oval window, where there is at first spongification of the bone followed by sclerosis and ankylosis of the foot plate of the stapes within the oval window. Many theories have been propounded from time to time to explain the constancy of this site of ankylosis, but no one has been able to satisfy the inquisitiveness of the research workers and the clinicians. The most accepted one is the presence of the tensor tympani, facial nerve, greater movement of the anterior part of the foot plate of the stapes compared with the posterior part and greater vascularity of the part due to anastomosis of the labyrinthine and middle ear vessels, predisposing the anterior part to spongification and later on to sclerosis. A vestigial structure "fissula ante fenestrum" which is located at this part of the labyrinth, having some cartilage cells, have not been overlooked as a probable factor leading to otosclerotic changes.

Signs and symptoms—A young adult patient with or without any family history, if complains of progressive type of deafness, with tinnitus and paracusis Willisii (a condition of deafness in which the hearing is better in a noisy place as in a train or factory) is probably suffering from otosclerosis. A typical case will show a normal tympanic membrane with red shimer, patent eustachian tube and waxless external auditory meatus, more or less insensitive to touch. Hearing test with tuning fork will reveal lower tone limit raised, i.e., 16 D.V., 32 D.V., 64 D.V. and 128 D.V. not heard by air conduction, increased bone conduction and negative Rinne (Bezold's triad).

Audiogram will clinch the diagnosis, showing loss of air conduction in all the frequencies, but bone conduction is maintained more or less near the normal line.

Treatment—All sorts of medicinal treatments have been tried and abandoned as useless.

Surgical treatment for the cure of otosclerosis dates back to the time of Kassel. In 1876 he attempted the mobilisation of the ankylosed stapes through a myringotomy opening, and later on failing to get the expected results performed stapedectomy.

Lempert (1946) modified Sourdille's operation and popularised this as one stage fenestration operation.

Rosen (1955) successfully operated on many thousand cases of otosclerosis following Lempert's technique. While operating on one such case in 1952, Rosen palpated the stapes through the wound and found that the stapes could be mobilised and the patient who was under local anaesthesia could respond to whispers on the operation table. His own technique is to operate through the external auditory meatus by using an ordinary aural speculum. He has further perfected the technique by making fenestra in the foot plate of the stapes itself.

A preliminary observation on results of operation in 50 cases of otosclerosis following Rosen's technique is reported.

MATERIAL AND METHOD

In our series of 50 cases, there were 35 males and 15 females. The age and sex incidence and the time of onset of the disease are given in Table 1. In about 22 per cent of the cases, history of deafness in the family could be obtained.

The cases operated were selected and classified into four different groups, according to Rosen's own method of classification (Table 2).

TABLE—1—SHOWING AGE AND SEX INCIDENCE, HEREDITARY INFLUENCE AND DURATION OF DEAFNESS

Sex	Total number operated with percentage	Age incidence			Duration of the disease				Hereditary influence with percentage	
		20-30 yrs.	31-40 yrs.	Above 40 yrs.	Up to 1 yr.	1-5 yrs.	6-10 yrs.	More than 10 yrs.		
Male	35 (70%)	19	13	3	1	11	13	10	7	22%
Female	15 (30%)	9	6	Nil	Nil	5	4	6	4	

TABLE 2—CLASSIFICATION ACCORDING TO AUDIOMETRIC REPORTS AND POSTOPERATIVE RESULTS

	Groups	No. operated	No. reported for assessment of results	POSTOPERATIVE RESULTS REPORTED						
				0-10 Db. improvement	11-20 Db. improvement	21-30 Db. improvement	31-40 Db. improvement	More than 40 Db. improvement	No improvement	Deterioration
				23·3%	23·3%	20%	10%	10%	10%	3·3%
1	Group A	13	10	1	0	3	3	1	1	1
2	Group B	11	6	2	1	1	0	2	0	0
3	Group C	13	9	2	5	2	0	0	0	0
4	Group D	13	5	2	1	0	0	0	2	0

(1) *Group A or favourable cases*—Preoperative maximum bone conduction loss in speech frequencies, i.e., at 1000, 2000 and 3000 C.P.S. is 10 Db. and preoperative maximum air conduction loss in speech frequencies is 40 to 45 Db.

(2) *Group B or moderately favourable cases*—Preoperative maximum bone conduction loss is 20 Db. at 1000, 2000 and 3000 C.P.S. and preoperative maximum air conduction loss is 45 to 50 Db. at 1000, 2000 and 3000 C.P.S.

(3) *Group C or borderline cases*—Preoperative maximum bone conduction loss is 30 Db. at 1000, 2000 and 3000 C.P.S. and preoperative maximum air conduction loss is 50 to 55 Db. at 1000, 2000 and 3000 C.P.S.

(4) *Group D or unsuitable cases*—Preoperative maximum bone conduction loss is above 30 Db. at 1000, 2000 and 3000 C.P.S. and preoperative maximum air conduction loss is more than 55 Db. at 1000, 2000 and 3000 C.P.S.

OPERATIVE TREATMENT

The author in this series followed Rosen's technique and the method with postoperative management is briefly described.

Pre-operative medications—Seconal sodium 2 grains, 2 hours before and pethidine hydrochloride 100 mg. intramuscular injection, 1 hour before the operation.

Infiltration and incision—Xylocaine in dental cartridge syringe is used for local anaesthesia. Four different points are selected for the injection viz., superiorly, anteriorly, inferiorly and posteriorly, just outside the junction of the cartilaginous and osseous parts of the external auditory meatus, taking care that the skin does not give way or there is no bleb formation.

Incision is started near about the posterior end of the posterior malleolar fold in the external auditory meatus and carried in a 'U' shaped manner along the posterior, inferior and anterior walls of the meatus up to near about the attachment of the anterior malleolar fold—the greatest convexity of the 'U' being about 6 to 8 mm. from the anulus tympanicus (Fig. 1). The skin flap is separated from the underlying bone by means of sharp elevators, up to the margin of the anulus tympanicus (Fig. 2).

Haemorrhage is controlled by means of small cotton wool balls, soaked in adrenaline chloride solution, pressed against the haemorrhagic points.

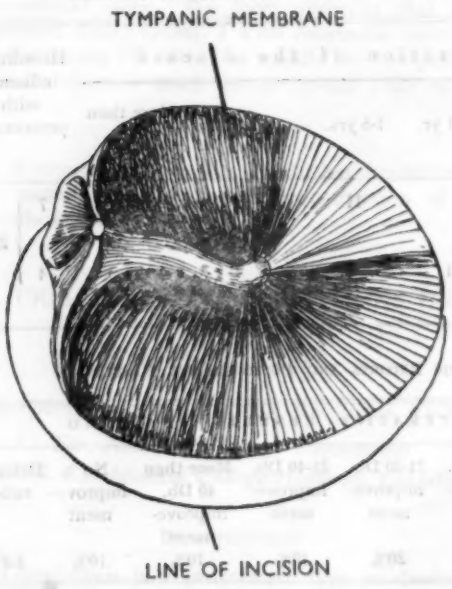

FIG. 1—SHOWING LINE OF INCISION.

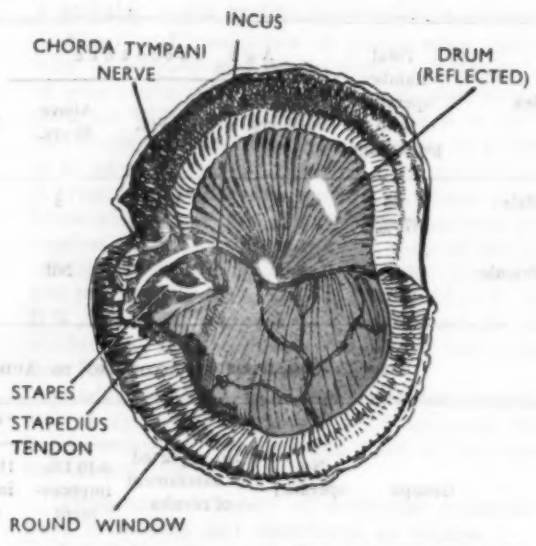

FIG. 3—SHOWING THAT THE BONE HAS BEEN CURETTED FROM THE POSTEROSUPERIOR QUADRANT.

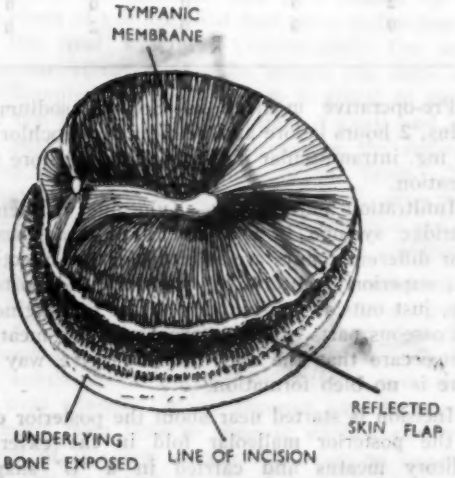

FIG. 2—SHOWING SEPARATION OF THE SKIN FLAP AND ITS REFLECTION.

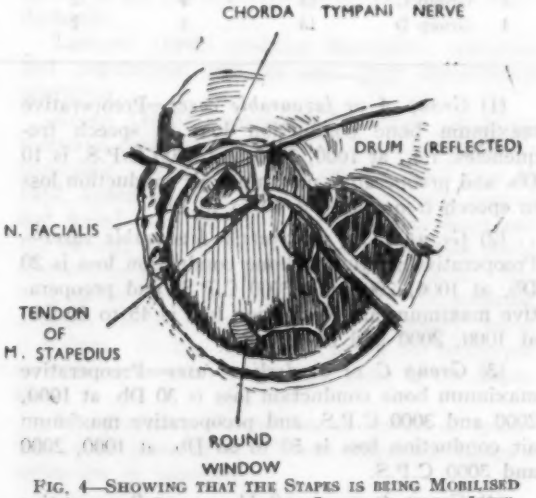

FIG. 4—SHOWING THAT THE STAPES IS BEING MOBILISED BY APPLYING PRESSURE ON THE INCUDOSTAPEDIAL JOINT.

Excess of blood is sucked by a lumbar puncture needle used as a suction tube. The tympanic ring along with the cutaneous flap is separated from the sulcus and folded over the tympanic membrane like an apron.

In majority of cases (nearly about 80 per cent) the incudostapedial joint is brought into view at this stage at the posterosuperior quadrant. About 2 to 3 millimeters of bone at this region (P.S. quadrant) is curetted (Fig. 3) by a special curette, in order to expose the whole of the long process of the incus, more of the incudostapedial joint, head, neck, anterior and posterior crura of the stapes, chorda tympani nerve and the stapedial foot plate. In 15 cases where there was excessive tinnitus, avulsion of the chorda tympani nerves were done at this step along with tympanosympathectomy.

TABLE 3—SHOWING PREOPERATIVE AND POSTOPERATIVE RESULTS OF VARIOUS TESTS

Case No.	Name	Age in years	Sex	Group of case	Preoperative whisper test	Postoperative whisper and conversation test on table	Progress and complication in the intermediate period	Late results and postoperative audiometry after 3-4 weeks
1.	P.B.	21	M.	B	−ve	wh.+ve 4′ con.+ve 8′	P—Good C—Nil	Improvement 0-10 Db.
2.	D.C.D.	32	M.	B	−ve	wh.+ve 3½′ con.+ve 7′	P—Fair C—C.S.O.M.	N.Y.R.
3.	S.B.	23	M.	B	−ve	wh.+ve 3′ con.+ve 7′	P—Good C—Nil	Improvement 0-10 Db.
4.	S.B.	36	M.	B	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	Improvement 11-20 Db.
5.	B.C.	29	M.	C	−ve	wh.−ve con.+ve 4′	P—Fair C—P.T.M.	N.Y.R.
6.	D.G.	27	M.	A	−ve	wh.−ve con.+ve 2′	P—Good C—Nil	Deterioration 0-10 Db.
7.	H.S.	29	M.	D	−ve	wh.−ve con.+ve 2′	P—Good C—Nil	N.Y.R.
8.	C.D.	27	M.	C	−ve	wh.+ve 5′ con.+ve 7′	P—Good C—Nil	Improvement 21-30 Db.
9.	A.S.	27	F.	A	−ve	wh.−ve con.+ve 4′	P—Fair C—Tinnitus & Vertigo	Improvement 0-10 Db.
10.	G.M.G.	33	M.	B	−ve	wh.+ve 4′ con.+ve 5′	P—Fair C—C.S.O.M.	N.Y.R.
11.	S.B.	26	M.	A	−ve	wh.+ve 3′ con.+ve 7′	P—Good C—Nil	Improvement 21-30 Db.
12.	R.D.	36	M.	A	−ve	wh.+ve 3′ con.+ve 8′	P—Good C—Nil	N.Y.R.
13.	M.D.	32	M.	A	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	Improvement 31-40 Db.
14.	D.P.C.	38	M.	C	−ve	wh.+ve 4′ con.+ve 8′	P—Good C—Nil	Improvement 11-20 Db.
15.	N.G.M.	32	M.	B	−ve	wh.−ve con.+ve 6′	P—Fair C—Facial palsy	N.Y.R.
16.	G.M.	32	M.	B	−ve	wh.+ve 3′ con.+ve 8′	P—Good C—Nil	N.Y.R.
17.	S.P.	34	M.	D	−ve	wh.+ve 4′ con.+ve 7′	P—Good C—Nil	Improvement 0-10 Db.
18.	S.C.	32	F.	C	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	N.Y.R.
19.	D.B.	30	F.	A	−ve	wh.+ve 3′ con.+ve 7′	P—Fair C—O.E.	N.Y.R.
20.	P.G.D.	31	M.	B	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	Improvement 41-50 Db.
21.	S.D.	38	M.	D	−ve	wh.−ve con.+ve 6′	P—Good C—Nil	Improvement 11-20 Db.
22.	H.K.R.C.	25	M.	C	−ve	wh.+ve 4′ con.+ve 8′	P—Fair C—O.E.	Improvement 21-30 Db.
23.	K.D.G.	28	M.	B	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	Improvement 21-30 Db.
24.	A.S.	20	F.	A	−ve	wh.−ve con.+ve 6′	P—Fair C—O.E.	Improvement 21-30 Db.
25	J.S.	24	F.	D	−ve	wh.−ve con.+ve 6′	P—Fair C—O.E.	No improvement

Wh.=Whisper; P=Progress; N.Y.R.=Not yet reported; Con.=Conversation; C=Complication; O.E.=Otitis Externa; C.S.O.M.=—Chronic Suppurative Otitis Media.

TABLE 3—*Contd.*

Case No.	Name	Age in years	Sex	Group of case	Preoperative whisper test	Postoperative whisper and conversation test on table	Progress and complication in the intermediate period	Late results and postoperative audiometry after 3-4 weeks
26.	N.K.B.	30	M.	C	−ve	wh.+ve 4′ con.+ve 8′	P—Fair C—Nil	Improvement 11-20 Db.
27.	N.S.	25	M.	D	−ve	wh.+ve 3′ con.+ve 8′	P—Fair C—O.E.	N.Y.R.
28.	M.K.M.	24	M.	B	−ve	wh.−ve con.+ve 6′	P—Good C—Nil	N.Y.R.
29.	N.C.B.	20	M.	D	−ve	wh.−ve con.+ve 7′	P—Fair C—Nil	N.Y.R.
30.	A.K.G.	28	M.	C	−ve	wh.−ve con.+ve 6′	P—Fair C—O.E.	N.Y.R.
31.	T.B.	22	F.	D	−ve	wh.−ve con.−ve	P—Fair C—O.E.	N.Y.R.
32.	R.D.G.	26	F.	A	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	Improvement 21-30 Db.
33.	B.D.	24	F.	A	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	Improvement 41-50 Db.
34.	M.N.	29	F.	A	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	Improvement 31-40 Db.
35.	P.C.M.	53	M.	C	−ve	wh.−ve con.+ve 6′	P—Bad C—Furuncle, O.E.	Improvement 11-20 Db.
36.	P.G.L.	28	M.	A	−ve	wh.+ve 4′ con.+ve 9′	P—Bad C—O.E.	Improvement 31-40 Db.
37.	S.C.	24	M.	C	−ve	wh.+ve 5′ con.+ve 8′	P—Good C—Nil	Improvement 11-20 Db.
38.	R.M.M.	20	F.	C	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	Improvement 0-10 Db.
39.	H.C.D.G.	60	M.	D	−ve	wh.+ve con.+ve 6′	P—Fair C—Nil	N.Y.R.
40.	M.G.	27	M.	B	−ve	wh.+ve 4′ con.+ve 10′	P—Good C—Nil	Improvement 41-50 Db.
41.	S.B.K.	26	M.	C	−ve	wh.−ve con.+ve 6′	P—Good C—Nil	Improvement 11-20 Db.
42.	C.D.	28	M.	A	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	No improvement
43.	S.K.R.	27	F.	D	−ve	wh.−ve con.−ve	P—Good C—Nil	Improvement 0-10 Db.
44.	G.C.	20	M.	C	−ve	wh.+ve 5′ con.+ve 9′	P—Fair C—O.E.	N.Y.R.
45.	G.C.	34	F.	A	wh.−ve	wh.−ve con.+ve 8′	P—Fair C—Nil	N.Y.R.
46.	L.C.	34	F.	C	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	Improvement 0-10 Db.
47.	J.K.P.	43	M.	D	−ve	wh.−ve con.+ve 8′	P—Good C—Nil	No improvement
48.	M.M.	36	F.	D	−ve	wh.+ve 4′ con.+ve 9′	P—Good C—Nil	N.Y.R.
49	S.D.	35	F.	D	−ve	wh.+ve 3′ con.+ve 9′	P—Good C—Nil	N.Y.R.
50.	N.S.	40	M.	D	−ve	wh.+ve 4′ con.+ve 8′	P—Good C—Nil	N.Y.R.

Wh.=Whisper; P=Progress; N.Y.R.=Not yet reported; Con.=Conversation; C=Complication; O.E.=Otitis Externa; C.S.O.M.=Chronic Suppurative Otitis Media.

Stapes is palpated to see its mobility through the lenticular process of the incus. In all cases it was found to be rigidly fixed with its foot plate to the oval window. Mobilisation was then carried out by the mobiliser, by applying pressure which should be gentle, intermittent and pulsating in contradistinction to strong and jerky pressure (Fig. 4). The latter is more likely to cause fracture of the crura and dislocation of the footplate of the stapes into the oval window. In the series of 50 cases reported here, incudostapedial pressure mobilised the footplate in 13 cases. Pressure on the anterior crus and/or neck caused mobilisation in 17 cases. Direct mobilisation by sharp pointed mobiliser in the inferior margin of the stapedial footplate had to be done in 20 cases. Fenestration of the footplate of the stapes was not done in any one of this series.

Whisper test and conversational voice test were carried out in each and every case. Results of these immediate postoperative tests have been tabulated (Table 3).

Reposition of the flap—The flap was reposited in its original position and the external auditory meatus was packed with sterile cotton wool.

Postoperative management—After the end of the operation the patient is carried to the bed and under the influence of the hypnotic allowed to sleep undisturbed. From the second day onwards the patient is allowed to get up and move about in the ward. Usually the diet is not restricted unless there is any difficulty in chewing etc. Crystalline penicillin 5 lac units I.M. twice daily is continued for 7 to 8 days.

The patient is strictly advised not to interfere with the operated ear by any means and to take every precaution to prevent entry of water, dirt and dust into it. During this period usually the patient complains of slight deterioration of the hearing than on the operation table due to accumulation of blood clots in the external auditory meatus and sometimes in the middle ear.

If the cotton plug in the operated ear remains dry and the patient does not complain of any pain or discomfort in the ear, it is not disturbed till the 7th day, when it is removed and the blood clots, if any, are thoroughly cleaned with alcohol-soaked cottonwool swabs. The ear is thoroughly inspected to see the condition of the flap and the tympanic membrane and the ear is again plugged loosely with sterile cotton. If on the other hand, the cotton plug becomes wet and sticky with discharge and the patient complains of pain, itching, heaviness in the ear, etc., the cotton plug should be changed earlier, i.e., on the 3rd or 4th day and according to the condition of the wound the dose and continuity of penicillin injections should be increased or it may be supplemented by other broad spectrum antibiotics. In any case, however, to keep the operated ear free from any infection is of great importance and every possible measure should be adopted to prevent it. If no complications arise, the patient can be discharged from the hospital after the first dressing or even earlier, with the advice to come after 14 and 21 days for further dressings and check-up.

The ear plug is removed and the tympanic membrane is examined again after 14 and 21 days, when the following features are looked for: (1) whether there is any persistence of blood clots, (2) whether the ear is dry or moist, (3) whether the membrane is intact and settled well, (4) whether the flap has fully taken up or is remaining loose in any quadrant.

If everything goes normal the postoperative audiogram is taken at the end of 3rd or 4th week in order to assess the ultimate improvement of the patient's hearing in the operated ear.

Summary

Stapes mobilisation was carried out by Rosen's technique on 50 cases of otosclerosis of different groups. Of these, 35 were males (70 per cent) and 15 were females (30 per cent).

Young adults, i.e., 20 to 30 year old patients contributed 56 per cent of the total cases and 36 per cent came under the age group of 31 to 40 years, whereas only 6 per cent of cases were above 40 years of age.

Only 30 patients reported for postoperative assessment of the result. Of the cases reported uptill now about 86·6 per cent showed definite improvement varying from slight improvement by 5 Db. to full restoration of hearing by 50 Db. There was no improvement in 10 per cent of cases and slight deterioration in 3·3 per cent.

Acknowledgments

I am indebted to the Superintendent of the R. G. Kar Medical College and Hospitals for allowing me to publish the records of the cases operated there and to Dr. S. K. Sen Gupta, Professor of Oto-Rhino-Laryngology, for giving me unlimited facilities and guidance. I shall be failing in my duty if I do not express my sincerest thanks to Dr. Ashish Mozumder, Registrar of my department, for compilation of the case records and rendering me all possible help and assistance, and also to my present house staffs, Drs. Narajitsudarson De and Gopal Chandra De, and to the nursing staff for their sincere co-operation.

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PRACTITIONERS' SERIES

MANAGEMENT OF SEXUAL DEBILITY IN YOUNG MEN— THE ABUSE OF TESTICULAR HORMONE

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"Get married, and everything will be all right" is rather a common advice given by surgeons, physicians and medical practitioners to young men who seek help before marriage for some sexual difficulties. In some cases the testicular hormone is indiscriminately prescribed which the author considers not only irrational but harmful.

Apart from venereal diseases, a fairly large number of cases come to venereal diseases clinics seeking relief for some common sexual difficulties. Although biologists, physiologists and psychologists admit that next to hunger for food, sex instinct is the most important instinct in human beings, yet this fact has not received the recognition and attention which it deserves. The present socio-economic condition has greatly contributed to the increase in cases of sexual disorders during the last few years.

The condition is very often diagnosed as 'psychic' with the glib advice to get married to get over the complexes. The object of this paper is to show that this is a wrong approach to the problem.

During the last six years, 11,613 cases of sexual disorders have sought relief in the Medical College Venereal Diseases Out-patients Department alone. Out of these only 12 cases could come under the category of 'psychic' origin and the rest were discovered to have some pathological changes in the accessory sexual organs. Anatomical defects or endocrine deficiencies are, however, responsible for some cases. A thorough physical examination and anamnesis is necessary to eliminate this group of cases. In our study only 9 were observed to belong to this category. It will be seen, therefore, that the majority of cases are normal, healthy, young men with a normal onset of puberty, normal genital organs and normal endocrine functions, with normal libido.

In our present day life, of late, sex is playing rather an important part. Henri Bergson, an eminent French philosopher, has very rightly observed—*Toute notre civilisation est aphrodisiaque* (Everything in our present civilisation is sex stimulating). There is a lot of truth in this statement. The young man of today appears to be more preoccupied with sex than his counterpart some 20 years ago, what with the vast volume of salacious and sex stimulating matter in literature, in newspapers and particularly the present-day silver screen to which he has ready access.

The stimulation of sex at puberty, when sex glands begin to function, reaches its acme at about the age of 22-25. This age in the opinion of the writer is the right age for marriage. At this age there is a constant stimulation of the sex centres, seeking gratification. In the absence of an outlet for normal heterosexual gratification, certain functional changes are brought about in the nervous system, the sex organs and the accessory sex organs.

PHYSIOLOGY

A word about the physiology of sex. The cerebrum has a centre for erotic desires situated near the hypothalamus. As soon as this centre is stimulated there sets in a 'libido' accentuated by the sense of touch, sight, hearing or smell. The impulses from the higher centres are sent to the erection centre in the sacral centre of the spinal cord. The erection centre in its turn sends impulses through the nervi erigentes, which relax the muscle coats of the arterioles of the penis and of the spongy tissue of the corpora cavernosa and spongiosa, while at the same time compressing the dorsal vein of the penis. The vascular tumescence of the penis results in erection. The erection is maintained during the sexual act through afferent impulses. When the erection centre is fully charged, it sends impulses to the ejaculation centre in the lumbar segments. The ejaculation centre towards the end of the act, sends impulses to muscle coats of the epididymes, ductus deferens, seminal vesicles and the prostate gland resulting in the ejaculation of the seminal fluid. After the act is over there is complete deplethorisation of the sex organs. The forceful ejaculation of thick seminal fluid through tiny openings of ejaculatory ducts (which are richly supplied with nerves) gives rise to a voluptuous sensation.

The history of most of the cases, who seek advice, reveals a constant and continuous sexual excitation in persons who are otherwise normal. In the majority of cases under study there has been no evidence of any testicular hormone deficiency or other endocrine deficiencies. The estimation of 17-ketosteroids in these cases had shown

that the figures are higher than normal. It is therefore, entirely wrong to prescribe the testicular hormone—testosterone propionate or any other endocrine glandular extracts, in such cases. Hence indiscriminate administration of sex hormones is strongly deprecated.

Pathological Changes

The pathological changes that take place are due to constant stimulation of sexual centres without proper gratification. This results in chronic congestion of the pelvic organs especially the prostate, posterior urethra and seminal vesicles. At the same time there sets in a condition of hyperirritation followed by a state of exhaustion in the sexual centres. Gradually, stronger stimuli are necessary to stimulate these centres and to bring on the erection. This state of affairs is brought about by excessive masturbation either physical or mental, coitus interruptus, excessive sexual indulgence, constant irritation in the posterior urethra by granulations and vegetations due to chronic infection. The irritation in the prostate and posterior urethra, causes reflex irritation of the higher centres and thereby induces the person to indulge in frequent masturbation. Masturbation again, causes further congestion of the pelvic organs. It will be seen therefore that a vicious circle is thus established in cases of frequent masturbation or in cases where there is improper gratification to a constant and continued sex stimulation.

To summarise, therefore, it may be said that the lack of proper erection is due to two main factors, viz.,

1. Exhaustion of sexual centres, and
2. Improper blood supply to the penis.

The prostate may be much enlarged even to the size of a small apple (normal size being that of a walnut) and can be felt per rectum—either bulging into the rectum or enlarged laterally. The posterior urethra is in a state of chronic congestion and this congesion extends backwards to the trigone of the urinary bladder and forwards to the bulbous urethra. The veru montanum as seen through the urethroscope is enlarged and congested. The congestion of the trigone accounts for the frequency of micturition that many patients complain of. It is interesting to note that persons suffering from 'congested prostate' complain of a variety of symptoms apart from sexual difficulties. The following have been observed: pain and heaviness of the lower limbs, lassitude, tachycardia, loss of memory, irritability of temper, inability to concentrate, etc. These phenomena can be explained by the fact that a congested prostate sets up reflex irritation upsetting the whole nervous system.

In spite of the fact that millions of rupees are being spent every year on education, the knowledge of sex and sex hygiene is extremely poor in our country even amongst medical students, leaving aside the lay public and the illiterate section of the people. Medical students learn anatomy, physiology, pathology of organic diseases but they are not taught physiology of sex. As a result of this ignorance about sex, a lot of misconception grows in the minds of the patients who suffer from such disorders and this misconception has to be tactfully found out and removed. This is not an easy task—it requires a lot of patience, sympathy and understanding on the part of the physician.

Further, these cases as a result of congestion of the prostate and other glands, suffer from excessive secretion of prostate gland and Cowper's glands, which very often are mistaken for involuntary discharge of semen. Hence it is that these patients believe that they are losing their strength and sexual power and frequently complain that their semen has become very thin and watery. When patients go to physicians for advice the former are asked to get their seminal fluid examined under the mistaken impression that the state of seminal fluid has something to do with the loss or weakness of sexual power. Cases are very often seen where the semen is normal but the sexual power is abnormally low; on the other hand, sexual power may be good but the semen might be deficient.

As mentioned above, patients of such categories also complain of spermatorrhoea. Defaecation spermatorrhoea is a harmless condition while urination spermatorrhoea is an extremely rare and dangerous condition.

What the majority of cases suffer from, is either excessive secretion of prostate gland or excess secretion of Cowper's glands. This excess secretion has very little significance with reference to the potency of the patient.

Misconceptions must be removed by a quiet talk with the patient before commencing treatment.

Prognosis

The result of treatment, if patiently carried out, is excellent. It must be remembered that this state of affairs, i.e., changes in the pelvic organs and the nervous system are brought about not in course of weeks or months but years. It stands to reason, therefore, that to get them back to normal is a question of time. An average case takes about 2 to 3 months. It must be empha-

sised that misconceptions and wrong ideas about sex must be removed to attain a perfect result. Cases with anatomical defects or endocrine deficiencies have to be treated in a different way from the treatment procedures described below.

MANAGEMENT

The management of these cases can be summarised as follows:

1. Rest to the sexual centres.
2. Decongestion of the pelvic organs and accessory sexual organs.
3. Removal of misconceptions (if any).
4. Assurance.

History taking, specially in relation to sex, is most important. By intelligent and careful interrogation much information can be elicited. In eliciting history the following points have to be kept in mind:

1. Onset of puberty.
2. Any sex stimulation before onset of puberty.
3. Sex history from puberty up to present day.
4. Sources of sex stimulation during this period.
5. The period at which the sex stimulation was at its height and the methods employed for gratification.
6. Sex aberrations, if any.

A thorough examination of the genitals and accessory sexual organs, viz., examination of prostate, seminal vesicles, vas deferens, external genitalia and preferably an examination with a urethroscope to determine the degree of congestion is necessary.

Indiscriminate advice to get married leads only to the discovery on the part of the unfortunate husband on his attempt at coitus, that he is not fully potent. Medical men, as has been pointed out before, are responsible for a large number of such unhappy marriages.

In sexual disorders we must treat the patients and not the disease by itself. There is not a single panacea for treatment of these cases. Every case has to be treated according to its own merit.

Diet—It should be wholesome, nourishing but *non-stimulating*. The following articles of diet should be avoided: Eggs, meat, spices, chillies, raw onion and garlic. The night meal should be light and preferably be at about 8 p.m. and at least two hours before going to bed. A full stomach at bed-time disturbs sleep and initiates fear. No liquid should be taken before going to bed because liquids at bed-time cause full bladder in the early hours of the morning and the full bladder irritates seminal vesicles.

The patient should be instructed to avoid all sources which stimulate sex particularly female company and reading erotic literature.

If there is any constipation, it should be rectified with the help of laxatives. If inflammation of colon is present, it should be treated. Colitis gives the patient a sense of incomplete evacuation and during evacuation he keeps on straining. This constant straining causes, either discharge of seminal fluid or secretion from the prostate gland. This works, adversely on the patient's mind.

Drugs—It has been mentioned above that sexual centres are at first in a state of hyperirritation followed by a state of exhaustion. The pelvic and accessory sexual organs are in a state of congestion. The drugs that are advocated are sedatives and decongestives. The following are recommended:

1. Bromides (potassium, sodium, strontium, ammonium and calcium).
2. Valerian.
3. Salix nigra.
4. Barbiturates (phenobarbitone in small doses).
5. Camphor monobrom.
6. Cotarnine hydrochloride or phthalate (this is a good decongestive for pelvic organs).

After two weeks of sedation, the dosage of the sedatives should be reduced and local treatment commenced. This is necessary in most of the cases.

Local treatment—(a) Gentle but firm prostatic massage in knee-elbow position, every other day. Four to six such sittings are necessary to start with. The massage should be done in a circular manner for each lobe—30 times, followed by 'figure of 8'—20 times. It is worthwhile remembering that a congested and enlarged prostate gland is an extremely sensitive organ. It is very often seen that on the first sitting of massage, the patients get fainting attacks due to shock. The treatment therefore during the first or 2nd sitting has to be performed in an extremely gentle way and the practitioner must have drugs handy, to combat these attacks. Usually the patient recovers in a few minutes after he is made to lie down.

(b) After the course of treatment as above—instillation into posterior urethra with ½ to 1 per cent solution of silver proteinate or 1 in 30,000 solution of silver nitrate should be started. Instillation is conveniently done by Ultzmann posterior urethral cannula. Massage and instillations should be continued for several weeks—three sittings every week.

(c) After 6 weeks—all sedatives are to be stopped and the patient should be put on a tonic consisting of minerals, glycerophosphates and strychnine in small doses.

The results are excellent provided the physician devotes a little time to these cases to remove the misconceptions.

Antispasmodics like hyoscyamus and belladonna may be effectively combined with decongestives. Tranquillisers may be added to the sedatives in obstinate cases where the patients suffer from anxiety-neurosis.

Conclusion

The majority of medical practitioners, surgeons, physicians, even today believe that the cause of sexual disorders is only psychic in origin. Volumes have been written on the psychological disorders in relation to sex by eminent men such as Havelock Ellis, Stekel, Hirschfeld, etc. The writer believes that when these were written, the physiological role of the prostate and the other accessory glands during erection, was not clearly identified. Physiology and biochemistry have advanced enormously in the last two decades and much more of the sexual phenomenon is known today than in the past. These cases of sexual disorders were in the past explained by Oedipus complex, fixation, inhibitions, perversion, etc. In our experience such abnormalities are extremely rare phenomena. Deep-rooted misconceptions arising out of lack of knowledge about sex may be considered as psychic and are sometimes difficult to remove. Psycho-analysts seem to forget the existence of the accessory sex glands and the pathological changes that are found in them. As has been shown before, there is excess of libido and excess of testicular hormone in the system. Further administration of this hormone causes more damage and also inhibits the function of anterior pituitary gland.

CASE NOTES

GARGOYLISM*

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Introduction

Gargoylism is a relatively uncommon disease. The existence of a group of children showing peculiar skeletal and other deformities was first reported by Hunter in 1916-17. Two years later Hurler (1919) described in two brothers a similar syndrome which often bears her name. But the credit goes to Ellis *et al* (1936) who first coined the name gargoylism to a group of cases with chondrodystrophy, hepatosplenomegaly, corneal opacity and mental dullness, on account of their "large head, grotesque inhuman facies and deformed limbs which suggest the appearance of gargoyl and render the patients closely similar to one another and the condition easily recognisable". A gargoyl is a grotesque spout with human or animal mouth, head or body projecting from the gutter of a building to carry water clear of wall. About 200 cases of this uncommon disease have been recorded in world literature. Lately, two cases have been admitted into our ward and are being reported for their rarity.

Case Reports

Case 1—C. S., a male child, aged 5 years, was brought to the out-patient department for the treatment of cretinism. On enquiry the father said that he noticed gradual enlargement of the head since the age of 6 months and swelling of the scrotum from 1 year; the patient started sitting at the age of two; he had delayed dentition, the first at the age of 1 year 3 months; the delay in physical and mental growth became more noticeable as the child grew older.

The parents of the child were healthy. Of their 9 children, the third one, a female child and the sixth one a male child, also had enlarged heads, thin and deformed limbs and both died at the age of 3 years. There was no history of miscarriage and all the issues were of full term normal deliveries.

On examination—The child appeared idiotic with grotesque facies, extreme dwarfism, marked kyphosis and deformed limbs (Fig. 1, *vide* Plate). The child weighed—23 lb. 11½ oz., with a height of 31½ inches (normal for a 1½ year child), and a span of 30 inches (proving shorter limbs). The occipitofrontal circumference was 21½" (normal for an adult) (Fig. 2, *vide* Plate). The face had a grotesque appearance with thick supra-orbital ridges, coarse eyebrows, depressed bridge of the nose, wide anteriorly turned nostrils. Hypertelorism was present. The lips were thick. The tongue appeared to be big and protruded. The teeth were regular. The corneae were hazy but perception of light was present. Hearing was defective. The neck was short. The chest showed a slight degree of pigeon-shaped deformity with flared lower ribs. The abdomen appeared bulged. There was a left-sided inguinal hernia. The liver and the spleen were enlarged—2½ inches each below the costal margins. They were firm, regular and not tender.

* The cases were reported at the Medical College (Calcutta) Re-Union, January 1958.

The upper limbs were relatively short and broad (13½ inches), movements of the shoulders, elbows and fingers were limited. Clawing of the hands was present. The fingers were thick and stubbed. The muscle tone was diminished.

The lower limbs were thin with very little deformity. A slight restriction of the movements of the knee joints was present. The patient was unable to stand.

There was marked lumbar kyphosis.

Investigations—X-ray: Skull—The anteroposterior diameter was enlarged with frontal bossing, absent frontal sinus and normal sella turcica. Vertebral bodies—All lumbar and lower dorsal vertebrae were irregular and flattened. The upper and anterior ends were formed. The first lumbar vertebra was very small and displaced backwards, there was beaking of L_2 and L_3 bodies. Glenoid fossae—very shallow (Fig. 3, *vide* Plate). Acetabular fossae—normal. Long bones—thick and irregular. Phalanges—thick, broad, irregular with coarse trabeculae. Humeral and carpal ossifications are delayed, only two carpal centres are seen instead of five (bone age 2 years).

Blood: Hb.—11·89 g. per cent., R.B.C.—3·78 million/c.mm., W.B.C.—7300/c.mm. with polymorphs 42 per cent, lymphocytes 36 per cent.

Bone marrow showed non-specific change without any abnormal intracellular masses.

Blood cholesterol—115 mg. per cent, blood calcium—11 mg. per cent and phosphorus—5·2 mg. per cent.

Kahn test and W.R. were negative.

E.C.G. showed no significant abnormality.

B.M.R. was not done.

Liver biopsy—Most of the liver cells were swollen and foamy in appearance.

Chemical nature of the infiltrating material could not be assessed properly. It was neither neutral fat nor phospholipid. Nor did this show any reaction for simple polysaccharide. No alkaline phosphatase was present in the foamy cells.

Case 2—K. K., a 5 year old male child, was brought to the out-patient department for the treatment of hernia. He had also difficulty in breathing. On enquiry the mother gave the history of frequent attacks of dyspnoea since birth. Swelling of the scrotum at the age of 1½ months, inability to stand and walk, delayed dentition—1½ years, retarded physical and mental growth. Family history was non-contributory.

On examination—An idiotic child with abnormal and dull facies with extreme dwarfism and marked kyphosis; height—29½″ (normal for a 1½ year child), weight—14 lb. 12 oz., the head circumference—17″ (not enlarged), brachycephalic.

The face was abnormal with thick, coarse and bushy eyebrows, the bridge of the nose depressed with anteriorly turned wide nostrils. Hypertelorism was present. The corneae were clear. The lips were thick.

The neck was short. The chest was deformed with presence of Harrison's sulcus.

The abdomen was protruded with flaring of the lower costal margins with umbilical and bilateral inguinal herniae. The liver was enlarged 1 inch below the costal margin and was firm. The spleen was enlarged 2 inches below the costal margin and was firm.

The upper limbs were short (13″) with a span of 28½″. All movements specially extension were limited. The fingers were short with fixed flexion of the interphalangeal joints.

Genu valgum was present on both sides. The muscles were hypotonic. There was marked kyphosis in the dorsolumbar region with slight scoliosis and rotation of the vertebrae in the dorsilumbar region.

Investigations—X-ray: Skull showed prominent frontal eminence and absent frontal sinus. The size was not enlarged. Vertebral bodies—All lumbar and lower dorsal vertebrae were shallow, small and irregular. 3rd, 4th lumbar vertebrae were somewhat beaked. Glenoid and acetabular cavities were shallow and irregular. Delayed ossification of humerus and carpal bones (bone age—2 years).

Blood—There was slight anaemia. Bone marrow showed no significant change. Blood cholesterol—normal, blood calcium—7 mg. per cent and phosphorus 2·1 mg. per cent. Kahn and W.R. tests were negative.

Liver biopsy—Most of the liver cells were swollen and foamy in appearance. Histochemistry was the same as in Case 1.

Discussion

These two cases present the important findings of the rare condition of gargoylism.

Since the epi-, meso- and hypoblastic structures are affected it is probable that the disease is metabolic in origin. The features are due to abnormal storage, in various structures of the body involving both the parenchymal and the connective tissues, of a substance not yet completely identified. Ellis *et al* (1930) speculated on the basis of the analogy with established disease of lipoid storage that gargoylism might belong to that group. Washington (1945) coined the term lipochondrodystrophy on the same belief. Within the last few years several authors have expressed doubts about the disease being a lipoidosis because of the persistent failure to demonstrate the lipoid nature of the deposit by staining method or by chemical analysis.

Lindsay *et al* (1948) suggested the deposit to be a polysaccharide presumably glycogen which at times may

Fig. 1— Showing healed incision mark on swollen right elbow and photophobia (Case 2).

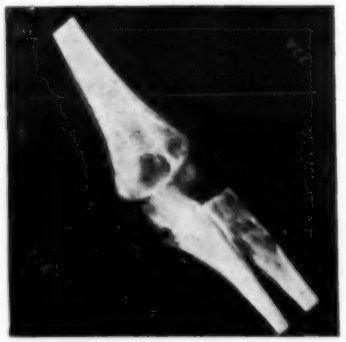

Fig. 2 and 2A—Skiagram of both elbows showing the characteristic features (Case 1).

Fig. 3— Skiagram showing bony ankylosis of both elbows with sequestration (Case 7).

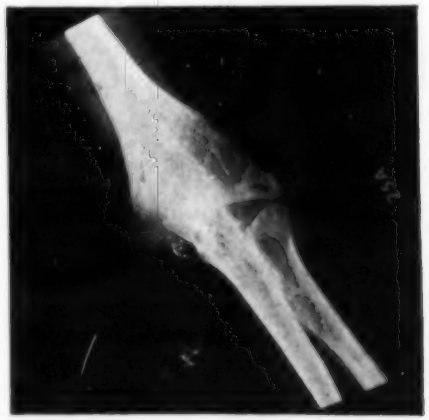

Fig. 4—Skiagram showing distortion of elbow joint and fibrous ankylosis (Case 4).

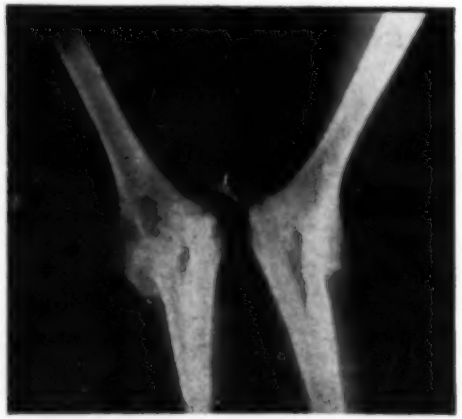

Fig. 5—Skiagram showing distortion and growth disturbances due to epiphyseal damage (Case 11).

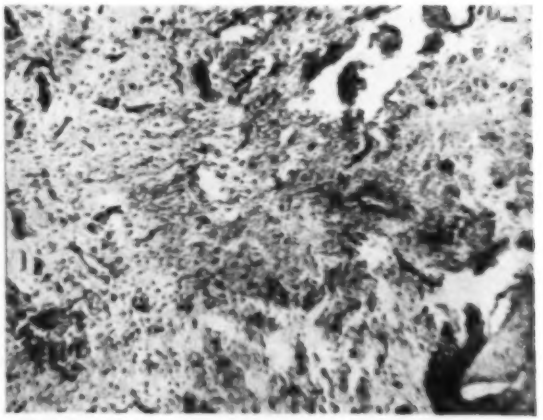

Fig. 6—Histopathology of bone showing a picture like that of osteitis fibrosa.

Fig. 1—Showing grotesque appearance with deformed limbs and chest and presence of inguino-scrotal hernia (left) (Case 1).

Fig. 2—The same case showing the typical large head with depressed bridge of nose.

Fig. 3—The same case showing shallow glenoid cavity.

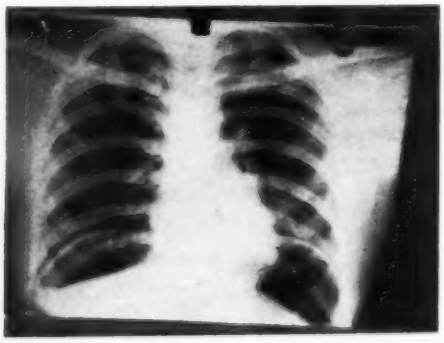

Fig. 1—Skiagram of the abdomen showing collection of air under both domes of the diaphragm.

KHATUA—*Gargoylism (p. 167)*

ANANTACHARI AND RAJAGOPALAN—*Unusual Features in a Case of Typhoid Fever (p. 171)*

ENGRAVED & PRINTED BY REPRODUCTION SYNDICATE, CALCUTTA 6

be combined with protein to form glycoprotein. But the quantitative analysis of lipoid and glycogen from the liver and the spleen (Handerson *et al*, 1952) showed the values within normal limits, thereby proving that the material is neither lipoid nor glycogen. Dawson (1954) showed that the infiltrating substance within the neurones differ in certain of its properties from that in other structures, possibly being a relatively insoluble polysaccharide—phospholipoid complex in the former and freely diffusible mucopolysaccharide in the latter.

Initially gargoylism was considered to have four typical features, namely, skeletal deformity, mental deficiency, clouding of the cornea and hepatosplenomegaly. Later observers (de Lange *et al*, 1944; Jervis, 1950) found that one or more of these 4 features may be absent while a similar underlying pathology is present—*formes frustes* of the classical syndrome.

The deformity of the nasopharynx and the purulent nasal discharge render these children particularly liable to infection of the respiratory tract. Our second case was an asthmatic.

No treatment is effective till now. Various authors have used thyroid extract, etc. But the results were disappointing. The patients under review were having glutamic acid and vitamin E till the time of reporting.

Summary

Two cases of gargoylism in Indian children are reported, one having the typical features of chondrodystrophy, mental dullness, corneal opacity and hepatosplenomegaly and the other with less marked features with clear corneae possibly indicating the difference in its inheritance.

A brief review of the literature has been made and the pathology and diagnosis of gargoylism discussed.

Acknowledgments

I express my sincere thanks to Dr. M. L. Biswas, senior visiting physician (Paediatrics) for kindly allowing me to report one case (Case 2) and to Dr. J. B. Chatterjea, Professor of Haematology, School of Tropical Medicine, Calcutta, for kindly doing the histology and histochemistry. My grateful thanks are also due to the Superintendent, Medical College Hospitals, Calcutta, for kindly allowing me to publish the report.

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UNUSUAL FEATURES IN A CASE OF TYPHOID FEVER

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Introduction

Symptoms of intestinal perforation in typhoid fever are masked by the administration of chloramphenicol. Perforation of an ulcer in the transverse colon is unusual and its recognition in a chloramphenicol-treated case, presents difficulties.

Case Report

Jayaraj, a male aged 16 years, was admitted on 15-12-56 to the Government Erskine Hospital, Madurai, with a history of continuous fever, headache and minimal cough for four days.

On examination the patient was toxic. The tongue was dry and coated. The temperature was 100·8°F. with a pulse rate of 130 per minute and respiration rate of 28 per minute. B.P.—S/D, 110/70 mm. Hg. Abdomen was distended, liver and spleen were not palpable. Bilateral basal rhonchi were heard.

Laboratory investigations—W. B. C.—5600/c.mm. with polymorphs 65 per cent, lymphocytes 32 per cent and monocytes 3 per cent. Blood culture—Negative for *S. typhi*. Widal—Positive, 1 in 50.

Chloramphenicol (1 capsule 6 hourly), vitamins, glucose saline drip and milk and orange feeds were started. The patient continued to be toxic with low muttering delirium and developed diarrhoea on 18-12-1956. The temperature was 100°F with a pulse rate of 98 per minute. The abdomen was distended for which turpentine stupes, flatus tube and mist. bismuth *et* kaolin were advised. Diarrhoea was controlled and the temperature was normal with pulse rate of 78 per minute, three days after chloramphenicol therapy. Forty capsules of chloramphenicol were administered during the period of twelve days. He took his discharge on 30-12-1956 against medical advice.

Eleven days later, he was again admitted with a history of fever and headache of two days' duration. This time also the patient was toxic and delirious with a temperature of only 100°F, pulse 112 per minute and B.P.—S/D, 96/62 mm. of Hg.

Abdomen showed distension. The spleen was palpable.

Laboratory investigation—W.B.C.—6,200/c.mm. with polymorphs 64 per cent, lymphocytes 34 per cent and eosinophils 2 per cent. Widal (11-1-57) was positive (1 in 200 dilution).

He was put on chloramphenicol (1 capsule 6 hourly), vitamins, glucose saline drip and coramine. The patient continued to be toxic for three days and the temperature touched normal six days after admission, although the pulse rate continued to be 96 per minute. On 19-1-57 the patient showed a distinct change, although his condition seemed apparently satisfactory. The following notes were recorded at 10 A.M. "Patient has shown a sudden change in the condition of his abdomen only. A flat abdomen has become distended and tympanitic with loss of liver dullness. Pulse has risen from 100 to 132 per minute, coincident with the change in the abdomen. Introduction of flatus tube has been ineffective. Palpation of the abdomen indicates gaseous distension, though guarding is not very clear. The whole abdomen is uniformly distended. Temperature shows no marked change. General state of the patient does not show toxaemia."

It was considered that the patient had developed a perforation, as a complication of enteric fever, classical signs being considerably modified by chloramphenicol treatment. Skiagram of the abdomen showed collection of air under both domes of the diaphragm (Fig. 1, *vide* Plate). The patient was referred to the surgeon for further treatment.

Laparotomy was performed five hours later. Free air escaped and brownish fluid was seen in the peritoneal cavity without the typical *B. coli* smell. The ileocaecal junction was first located and the lower coils of ileum scrutinised. There was no evidence of perforation and ulceration either. The coils were very hyperaemic. On examination of the colon, there was a tiny perforation in the middle of the transverse colon. The perforation was closed and reinforced with omentum. The free fluid was sucked out, and a drain brought out through the right loin. The abdomen was closed after instilling streptomycin. The general condition of the patient was much better and there was no distension of the abdomen.

On the third post-operative day at 11-45 P.M., he became restless and showed distension of abdomen again. He was given supportive treatment. He died of toxaemia on the next day.

Comments

In this case, chloramphenicol had apparently controlled the fever and nothing else, during both periods of admission. It further masked nearly completely the classical signs of perforation. Why should there have been a practically normal appearance of the small intestines and the perforation took place, most unusually in the transverse colon, is not explicable. The first period of infection had not given the patient any immunity, so that he had a relapse and died of a complication in spite of continued coverage by chloramphenicol.

Acknowledgments

We are grateful to the Superintendent, Government Erskine Hospital, Madurai, for allowing us to report the case. We thank Dr. C. K. Padmanabha Menon, Surgeon, and Dr. A. Asirvatham, Surgical Registrar for their assistance.

XXXV ALL-INDIA MEDICAL CONFERENCE, CUTTACK, 1958

The 35th All-India Medical Conference is scheduled to be held at Cuttack during the last week of December 1958. The subject matters selected for the Scientific Session are as follows :

(A) SYMPOSIA : *(1) Diseases of the Liver (General discussion on Physiological, Pathological and Medical Aspects). (2) Filarial Lymphoedema of Limbs (Discussion on Pathological, Medical and Surgical Aspects). (3) The Role of Sterilisation in Family Planning.*

(B) GENERAL PAPERS : *Papers on various branches of Medical Science.*

An appeal is made to the Principals, Heads of the Departments of the Medical Colleges, Directors of Medical and Biological institutions and Secretaries of the State Branches of the I.M.A. to send names of the participants from their institutions.

Members of the I.M.A. are requested to extend their active co-operation to ensure the success of the Scientific Session.

Friends who are willing to participate in the Scientific Session are requested to send a summary of their paper by 1-11-58 to the Organising Secretary, XXXV All-India Medical Conference, S. C. B. Medical College, Cuttack.

XIII MADRAS STATE MEDICAL CONFERENCE, MADRAS, 1958

The 13th Madras State Medical Conference under the auspices of the Indian Medical Association is to be held in the City of Madras during the last week of November 1958, and there will be as usual a Scientific Session and an Exhibition of Medical Products and Surgical Appliances. A Souvenir will also be published on the occasion. Further details may be had from the Hony. Secretary, I.M.A., Madras City Branch, 40/41, Pidariar Koil Street, Madras 1.

JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION

CALCUTTA, AUGUST 16, 1958

NEW MEDICAL COLLEGES *VIS-A-VIS* UNDER-EMPLOYED DOCTORS

The Council of the World Medical Association noted in 1949-50 that "even within nations with sufficient doctors for the population, there tended to be a universal shortage of doctors in rural or scarcely populated areas". In the light of the above, it is essential for the Central and States authorities to consider carefully whether almost all the qualified medical practitioners are usefully employed and properly distributed.

With deep regret, we have to point out, once again, that a very large number of qualified and registered medical practitioners in West Bengal is still in need of useful employment on suitable terms and conditions. Simultaneously, we are really surprised to note that not only hundreds of young hopefuls are still being admitted in the four medical colleges in West Bengal, but also a fifth has been allowed to be started. Further, on account of language difficulties, unattractive terms and conditions, and in some cases possibly a provincial spirit, it has not yet been practicable for many States in India to absorb these unemployed and under-employed doctors of West Bengal, in hundreds and thousands. It is natural for these States to start more and more new Medical Colleges with the financial assistance of the Government of India to cope with the situation in their own regions.

We would ask all authorities concerned to ponder over this serious situation in West Bengal and devise ways and means for its amelioration. Will it be possible for the Government of West Bengal to create at least part-time employment for a few thousand qualified doctors to serve the rural areas, where their services would be needed most? Should not the Government of India provide adequate funds to the Government of West Bengal for this specific purpose? Moreover, the Government of India can advise the other Member-States of the Eastern Zone, to create at least a thousand such posts for the rural areas of each of these States and provide them with sufficient funds for this specific purpose. If a scheme of this nature can be evolved and these doctors are given the necessary public health training, the standard of health of the people of the neglected rural areas of the Eastern Zone can be improved considerably within a short space of time. Till then, should the medical colleges in West Bengal go on admitting hundreds of new students or should the number be curtailed?

We would suggest the bare outlines of a scheme for consideration by Authority. The Union Government should prepare a programme for starting at least five hundred miniature primary health centres for the rural areas of each of the States of Assam, Bihar, Orissa and West Bengal. The State Governments should be advised, in the mean time to request their legislators, the State branches of the Indian Medical Association and the district health authorities to select the sites for these centres, to be started during the second five-year plan period. At the initial stage, the active co-operation of the people of the selected areas where such centres are most needed, should be sought, particularly for provision of accommodation for the health centre *cum* dispensary as well as for the staff of the centre, in existing buildings and cottages. Where such accommodation is not available, semi-permanent or temporary structures should be immediately erected by the Government.

For each such centre, we may suggest appointment of two qualified doctors and four health assistants, to start with. After recruitment by open advertisement, the recruited personnel would, naturally, have to undergo training in public health for 4 to 6 weeks, before being posted. If the Government can spare the necessary funds, we would request them to appoint such doctors on a whole-time basis, on a salary of Rs. 350-950/- per month with 25 per cent of their pay as non-practising allowance and an additional allowance for working in rural and outlying areas. If the Government cannot spare the required funds these doctors may, in the first instance, be appointed, on a part-time basis, on adequate remuneration.

Permanent structures should wait till the third plan period. From the very beginning, however, the centre should be well equipped with medicines and appliances required for preventive and curative work.

The scheme outlined should not be rejected on the plea of a shortage of qualified ancillaries. These can be inducted as and when they would be available. Till then, the neglected rural areas should not be denied the privileges of modern methods in the promotion of health. The scheme, we think, is worth a fair trial. For speeding its implementation, the Government of India should appoint an independent board consisting of representatives of the State Governments, legislatures and the Indian Medical Association.

CURRENT MEDICAL LITERATURE

False Diagnosis of Hyperthyroidism

JACKSON, A. S. (*J. A. M. A.*, **165**: 1533, 1957) from the Frieda Meyers Nishan Foundation for the Study of Goitre and Thyroid Diseases of the Jackson Clinic, Madison, Wis., from an analysis of 228 cases in which surgery had been advised elsewhere on the basis of a misdiagnosis of hyperthyroidism observes:

The corrected diagnosis was nervous tension and exhaustion in 112 cases; menopause, 30; physical exhaustion, 27; normal, 11; colloid goiter, 11; rheumatic endocarditis, 3; psychoneurosis, 8; hypothyroidism, 6; and miscellaneous, 20. It is believed that in the first (largest) group the most important single factor was the excessive use of coffee, tea, and tobacco; these were sometiems used in surprising amounts, sufficient to explain the nervous tension, tremor, insomnia, cardiovascular disorders, and weight loss. Determinations of basal metabolic rate gave useful informaton when repeated on different days with due care by experienced technicians; single determinations prove misleading. For a diagnosis of hyperthyroidism the basal metabolic rate, the protein-bound iodine test, and the radioactive iodine test should all be significant. If the two last named are not available, the iodine test should be done, consisting of the administration of 10 drops of strong iodine solution (Lugol's solution) three times a day for 10 days. Cautions in performing and interpreting this test are noted. Thyroidectomy is not an emergency operation, and needs to be justified by complete diagnostic information.

Myxoedema Reflex

HOUSTON, C. S. (*Canad. M. A. J.*, **78**: 108, 1958) in reporting on the diagnostic importance of the myxoedema reflex (Woltman's sign) writes that in five consecutive cases of myxoedema occurring in a general practice the classical Woltman sign of myxoedema was present. This was of great value in confirming the diagnosis or even first suggesting the diagnosis. The usefulness and reliability of this sign is stressed.

The tendo-achillis is the best site at which to demonstrate this sign, but it is sometimes detected at the biceps or in other muscle stretch reflexes.

The patient is seated on the examining table, with lower legs dependent, so that the relaxation phase of the ankle reflex will be in an opposite direction to gravity and thus more readily apparent. The foot is held gently in one hand and the tendo-achilles tapped with a reflex hammer with the other hand. The magnitude of deflection may be somewhat diminished or may be normal, and the speed of contraction is comparable to any normal reflex response. The crucial part is the relaxation phase; instead of quickly returning to the starting position, the foot comes back very slowly, taking almost a full second to return. Although this is a subjective observation, once one has felt the slow relaxation of a myxoedema reflex it is surprisingly easy to differentiate this from a normal reflex.

This sign, when present, is virtually diagnostic, as there are no 'false positives' recorded in the literature. Of course, some patients with myxoedema will have reflexes that are absent or so weak that the slow relaxation is not apparent.

Thrombopathic States

MCILVAINE, S. K. (*J. A. M. A.*, **166**: 2114, 1958) from the Department of Medicine, Rockwood Clinic, Washington from the study on a clinical approach to the evaluation of the mild or questionable bleeder in the 24 patients with thromboplastic state observes:

A searching history is the best screening test. A positive family history was obtained in two-thirds of the patients and was usually manifested as a simple dominant trait. In one family a recessive (x-borne) type of inheritance was demonstrated in which a platelet-plasma thrombopathic state was present associated with mild haemophilia.

A variably prolonged bleeding time was the most frequent laboratory finding, whereas a history of excessive bleeding after tooth extraction was the most important anamnestic observation. Other important symptoms were easy bruisability, epistaxis, gingival bleeding, and menorrhagia. Purpura was absent. Approximately one-half of the patients at some time had abnormal prothrombin consumption and/or thrombin generation.

A mild to moderate reduction in the one-stage prothrombin content, due to AC globulin (conversion accelerator, V factor, labile factor) deficiency, was noted in about one-fourth of the patients and may be only one facet of a potentially serious defect in haemostasis. One post-thyroidectomy fatality occurred in this group.

Classification is difficult and frequently artificial since the variation in findings among bleeders in a single kindred group could frequentlly lead to multiple diagnoses. The cases in general fit the so-called thrombopathic state of von Willebrand and include variable abnormalities of labile prothrombin accelerator, platelet prothrombin accelerator, and platelet co-thromboplastin defect. Three bleeders, not reported on, had normal clotting times and slightly prolonged bleeding times; two were shown to have antihaemophilic globulin (AHG) deficiency, and one had plasma thromboplastin component (PTC) deficiency. From the standpoint of management it is important to evaluate the individual and define the defect in terms of a therapeutic approach.

Therapy is often difficult, and whole blood transfusions are usually without direct benefit. The use of silicone-treated and plastic-protected blood is of aid. Adrenal steroids were used in 12 patients and were effective in 10. The effect is nonspecific and may require two to three days to become manifest. Thrombophlebitis is a serious complication of this therapy. Control of bleeding persisted for several weeks after stopping administration of the drug, so that intermittent therapy provided excellent control of chronic epistaxis, menorrhagia, and gingival bleeding. Combination of regularly spaced transfusions of fresh blood or plasma in plastic bags, adequate local measures, plus steroids is optimal treatment of the thrombopathic hemorrhagic state. Therapy with conjugated oestrogenic substances (Premarin) is indicated when deficiency of labile prothrombin accelerator is present. (*Author's Summary*).

Genes and Amino-acids

Recent work by V. M. Ingram, of the Medical Research Council Unit attached to the Cavendish Laboratory, Cambridge, has been of outstanding importance in elucidating genetic processes, and his chemical analysis of haemoglobins A. S. and $C^{1,3}$ represents a most important development in the field of haemoglobinopathies. The globin part of the haemoglobin molecule contains some 600 aminoacids. As globin is made up of two identical mirror-image halves Ingram could confine himself to the chemical identification of 300 amino-acids. These 300 amino-acids, known to be of nineteen different kinds, are arranged in two chains of about 150 each. Trypsin hydrolyses an amino-acid chain only at points where lysine or arginine occurs, and in each half-molecule of globin there are about 26 of these two amino-acids placed at intervals in the two chains. By tryptic digestion Ingram was, therefore, able to break down the two chains of the half-molecule into 28 fragments, each of them a peptide chain containing about one dozen amino-acids. By a combination of electrophoresis and chromatography these 28 peptides could be separated and identified. Ingram found then that the difference between haemoglobins A, S, and C could be narrowed down to one particular peptide containing nine amino-acids. Eight of these were the same in all three, but one was different: glutamic acid in haemoglobin A, valine in haemoglobin S, and lysine in haemoglobin C.

The three haemoglobins are the products of allelic genes. The formation of haemoglobin S or C instead of normal adult haemoglobin A is apparently the result of gene action on this one small part of the haemoglobin molecule. The inheritance of haemoglobins and other characters is carried from generation to generation in the chromosomes, which form the nuclei of the germ cells. These chromosomes are chains of nucleic acids, and the genes are thought to be individual nucleic acids in the chains. As such they are self-reproducing and either directly or indirectly they determine the structure of particular proteins. The mutation from the haemoglobin A gene to its alleles responsible for haemoglobins S or C must then be a minute change in one of these nucleic acids. It is clear that Ingram's work is of great importance beyond the subject of the synthesis of the haemoglobin variants with which it is immediately concerned. Two problems of particular urgency on which it has a direct bearing are the development of cancerous change and the effect of radiation on the human mutation rate—*Annotation, Brit M. J.*, **1**: 1170, 1958.

Primary Atypical Pneumonia and High Sedimentation Rate

GALBRAITH, H. J. B. AND JONES, K. W. (*Brit. M. J.*, **1**: 1144, 1958) from St. Thomas's Hospital, London, report that thirteen out of 16 patients with pneumonia associated with significantly raised titres of cold agglutinins in the serum had Westergren sedimentation rates of over 90 mm. in one hour when first examined.

Nine of these patients were sporadic but consecutive cases of clinically atypical pneumonia, of whom seven had an E.S.R. of over 90 mm. on admission and four had rates of 120 mm. or more at some stage of their illness. These levels are much higher than those commonly seen in acute pneumonia.

The high sedimentation rates are not due to the excessive aggression of red cells produced by the cold agglutinins. The plasma protein abnormalities which occur do not appear to be unusual or specific to this form of pneumonia.

Such very high rates can be demonstrated only by the Westergren method; the Wintrobe method may give disproportionately low or even normal result.

If a patient with acute uncomplicated pneumonia has an E.S.R. of over 90 mm. the diagnosis of primary atypical pneumonia should be considered, especially if there are any other unusual features.

Serum Iron Determination in Liver Diseases

LI, P. K., LU, H. M., SHIP, P. C., HOU, C. S., KU, C. H, JU, W. Y. AND CHEN, S. H. (*Chinese M. J.* **76**: 436, 1958) from the Department of Medicine, Sanghai Second Medical College, Sanghai, from an analysis of 267 serum iron determinations done among 171 cases of which 144 were patients suffering from hepatobiliary diseases observe:

The serum iron levels were found to be significantly raised in patients with viral hepatitis, mostly above 200 microgrammes per cent. In patients with liver-cell cirrhosis, extrahepatic obstructive jaundice and other hepatobiliary disorders, the serum iron levels were below 200 microgrammes per cent.

Serial serum iron determinations in patients with viral hepatitis have considerable prognostic as well as diagnostic significance.

In the differential diagnosis between infectious hepatitis and extrahepatic obstructive jaundice, serum iron determination is definitely valuable.

Serum-Potassium Level and pH of Arterial Blood in Respiratory Acidosis

FOULDS, H. P. S., MENDEL, D. AND DE MOWBRAY, R. R. (*Lancet*, **1**: 405, 1958) from the St. Bartholomews Hospital, London, give below the summary of their observations on the changes in serum-potassium level and in pH of arterial blood in respiratory acidosis:

Serum-potassium levels higher than 5·5 mEq. per litre were observed in 7 out of 16 patients with emphysema.

Of these 7 patients 5 were actually ill with respiratory infection. In 3 of them serum-potassium levels of 7 mEq. per litre or higher were recorded; these 3 were the most severally ill in this series and presented the clinical picture of carbon-dioxide narcosis.

In 3 patients the serum-potassium levels rose rapidly during oxygen therapy. In 1 of these the potassium change was associated with a rapid decrease of the pH of the arterial blood; another patient showed a slight rise in serum-potassium level in association with an increase of pH due to hyperventilation.

The rise in serum-potassium level probably represents a transfer of potassium from the cells to the extracellular fluid. This may be due to an increase pCO_2 and experimental evidence suggests that the potassium may be liberated from the muscles. This is not the only mecha-

nism, however, because the serum-potassium level may also rise slightly during hyperventilation. Impaired renal function may also be a factor.

Rapid rises of extracellular potassium concentration might contribute to the unexplained sudden deaths which occur in cor pulmonale. The liability of such patients to develop carbon-dioxide narcosis as a result of intensive oxygen therapy is well recognised, and occasional hyperkalaemia developing under these conditions may be a further reason for caution in the administration of oxygen.

Influence of Acid-Base Balance on the Action of Drugs

Changes in acid-base balance have long been known to influence both the therapeutic and toxic effects of salicylates. Administration of sodium bicarbonate reduces the toxicity and plasma level of salicylate; and Smith *et al* showed that this was due to increased rate of excretion of salicylate in alkaline urine. The clearance of unconjugated salicylate is much lower than that of inulin in acid urine but is higher in alkaline urine. Hyperventilation and acetazolamide, both of which produce an alkaline urine, are as effective as sodium bicarbonate in increasing salicylate excretion. Since acetazolamide produces systemic acidosis, the increased salicylate excretion in alkaline urine must be related to urinary pH and not to change in systemic acid-base balance.

More recently the excretion of two other important drugs, phenobarbitone and emcamylamine ('Inversine'), has been shown to resemble that of salicylate. Phenobarbitone, which is a weak acid, is excreted more rapidly when the urine is alkaline. Barbitone itself, although also largely eliminated in the urine is little affected by variation in acid-base balance. Mecamylamine, a weak base, is excreted more rapidly when the urine is acid. Other ganglion-blocking drugs, such as hexamethonium and pentolinium, are much stronger bases and are unaffected by acidosis or alkalosis. Many other weak bases, including mepacrine and chloroquine, procaine, and quinine, are excreted in the same way as mecamylamine. Variation in excretion-rate in the case of the weak-base drugs is, however, of little importance since only a small proportion of any dose appears in the urine. Alkalinisation of the urine increases the hypotensive effect of mecamylamine, and reduces the toxicity of phenobarbitone and salicylate. Acidification of the urine by ingestion of ammonium chloride has the opposite effect. Treatment with sodium bicarbonate has been recommended both in salicylate and in phenobarbitone poisoning. Other workers have recommended dialysis with the artificial kidney in salicylate and barbiturate intoxication. Probably the ideal method of removing the drugs from the body in severe poisoning is a combination of the two methods.

Variation in the rate of excretion of these drugs influences the amount retained in the body, and therefore, there is a gradual modification of their pharmacological effects. In contrast, sudden changes in systemic acid base balance may rapidly alter the distribution of drugs within the body, while the total amount remains unchanged. This may be associated with corresponding change in their specific action. Respiratory acidosis induced by breathing 10 per cent CO_2 increases the plasma levels of the bases mepacrine and chloroquine and of mecamylamine, but reduces those of the acids phenobarbitone and thiopentone. Except in the case of thiopentone, this is associated with a reverse change in the intracellular concentration of the drugs. Thiopentone is largely stored in adipose tissue, and in this case acidosis causes mobilisation of the drug from body fat. An increased plasma level caused by acid-base change increases the pharmacological effect of mecamylamine, but reduces that of phenobarbitone. This observation may be of considerable practical importance during anaesthesia.—*Annotation, Lancet,* **1** : 148, 1958.

Resistance and Sensitivity to Digitalis

CRAIG, L. C., LOWN, B. AND LEVINE, S. A. (*J. A. M. A.*, **166** : 2139, 1958) from the Medical Clinic, Peter Bent Brigham Hospital and the Department of Medicine, Harvard Medical School, Boston, write that there is great variability in the amount of digitalis necessary for optimum effect in different individuals. In a considerable group of patients unusual resistance or marked sensitivity may occur.

The two most important factors which determine the responsiveness to digitalis are the state of the heart muscle and the electrolyte balance in the body. With increasing severity of cardiac decompensation, especially when this is the result of heart muscle insufficiency, smaller doses of digitalis will produce intoxication. When body potassium is depleted, enhanced sensitivity to digitalis results. The operation of these two factors may be the common underlying basis for sensitivity as well as resistance to digitalis under all circumstances.

Awareness of these principles is of clinical significance. At times it will prevent severe digitalis intoxication and even fatality. At other times it will enable one to attain cardiac compensation and recovery when the condition might otherwise be regarded as refractory to therapy.

Antihypertensive Drugs as a Cause of the Acute Abdomen

FURSTE, W., PHELPS, D. AND TAYLOR, P. (*J. A. M. A.*, **166** : 2111, 1958) from the Department of Surgery of Ohio State University of White Cross Hospital, Columbus, write that antihypertensive drugs may produce abdominal problems. Four patients, with a clinical picture suggesting the possibility of an acute surgical abdomen to the extent of prompting surgical consultation, were eventually diagnosed as having paralytic ileus and/or vomiting from antihypertensive drugs. Diagnosis of such side-effects depends on an awareness that the patients are receiving the drugs.

Choice of a Diuretic Agent

FARD, R. V., ROCHELLE, J. B., HANDLEY, C. A. MOYER, J. H. AND SPURR, C. L. (*J.A.M.A.*, **166** : 129, 1958) from the Departments of Medicine and Pharmacology, Baylor University College of Medicine and the Veterans Administration Hospital, write :

The urinary excretion of six ions (sodium, chloride, potassium, ammonium, bicarbonate, and phosphate) was studied by a method of fractional urine collections in a series of subjects who were receiving a diet constant

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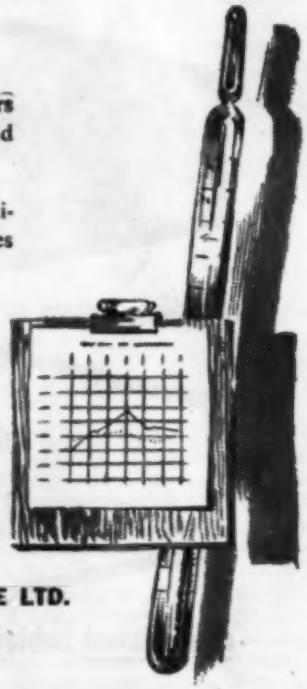

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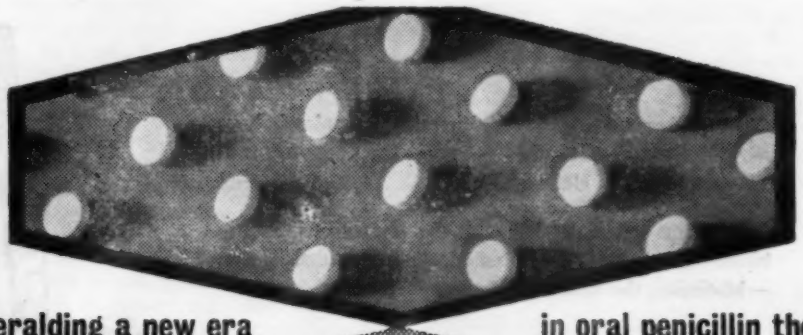

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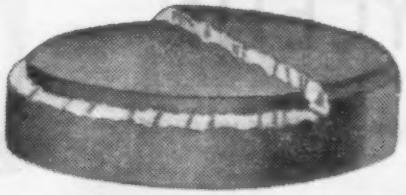

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with respect to water, sodium, and calories. The effects of five diuretics of different types were then compared. Each gave a distinctive pattern of electrolyte excretion. They differed with respect to potency when given in clinically tolerated doses to patients in comparable states of oedema. Diuretics of the aminouracil and the carbonic anhydrase inhibitor groups lost in effectveness after the first or second days of therapy, in spite of continued excess of sodium and water in the body; they appeared to be unsuited for use over long periods to maintain an oedema-free state. Chlormerodrin and chlorothiazide, representing two different types of diuretics, were found suitable for administration by mouth in all classes of oedema. With respect to economy and ease of administration, chlorothiazide had the advantage.

Use of Chlorothiazide in Oedema

LARAGH, J. H., HEINEMAN, H. O., AND DEMARTIERI, Y. H. (*J. A. M. A.*, **166**: 145, 1958) from the Department of Medicine of the Presbyterian Hospital, the Francis Delafield Hospital in the city of New York and the College of Physicians and Surgeons of Columbia University give below a summary of their observations on the use of chlorothiazide in oedema:

A new sulfonamide compound, chlorothiazide, has been found to have important effects on ion transport in man. Metabolic balance data have been collected from 32 patients in advanced states of fluid retention from heart failure, cirrhosis of the liver, and nephrosis. The data indicate that orally administered chlorothiazide is a useful diuretic agent. It appears to be at least as potent as an intramuscularly given mercurial diuretic and can act to remove oedema when other measures have failed.

Chlorothiazide increases the renal excretion of chloride, sodium, and potassium without an apparent effect on glomerular filtration. The mode of action of chlorothiazide appears to be different from that of other known diuretic agents. Its effects are additive to those of an organic mercurial agent or a carbonic anhydrase inhibitor and appear also to be independent of plasma chloride concentration. Moreover, the drug may be effective in conditions resistant to mercurial diuretics. In short-term studies in two normal subjects chlorothiazide and meralluride were shown to have qualitatively different effects on the clearance of "free" water.

Refractoriness does not develop readily, and no significant toxicity has been observed in this series. The continued daily use of the compound usually leads to hypokalaemic alkalosis. This effect is readily reversed by administration of potassium chlorde. The data suggest that the compound either should be given on an intermittent dosage schedule or should be supplemented by potassium chloride therapy. Alteration with a carbonic anhydrase inhibitor may also be advantageous. In certain instances combination of chlorothiazide with an organic mercurial has led to striking diuresis after other measures have failed.

Addendum—Since this work was submitted, a patient had come to autopsy who had been receiving chlorothiazide therapy intermittently for about six months. In addition, he received mercurial diuretics, acetazolamide (Diamox), and a number of other preparations for his chronic congestive heart failure. The terminal illness was characterised by a rapid increase in urea nitrogen to levels above 150 mg. per 100 c.c. and a marked reduction in urinary volume. Pathological studies revealed only non-specific changes in the renal tubules with normal glomeruli. Certainly the cause of this nephrosis is obscure. While it does not seem likely that the renal failure resulted from chlorothiazide therapy, the cause is reported in order to alert others to this possibility.

Chlorothiazide as an Oral Diuretic

BAYLISS, R. I. S., MARRACK, D., REES, J. R., AND ZILVA, J. F. (*Lancet*, **1**: 120, 1958) from the Departments of Medicine & Chemical Pathology, Westminister Hospital, London, from an analysis of the study on the value of chlorothiazide, a non-mercurial orally active diuretic, tried in 24 oedematous patients of whom 17 had congestive heart failure and 11 had responded poorly to mersalyl, observed:

A daily dose of 2 g. produced good results (with clearing of the oedema) in 14 patients. In 7 the results were less satisfactory and in 3 they were poor.

Chlorothiazide may be effective in patients who do not respond to mersalyl, and it enhances the response to mersalyl even in patients who have become mersalyl-resistant.

Except for 1 patient who developed malaise and anorexia, no toxic effects were observed.

Chlorothiazide may cause potassium depletion, partilarly if continuous treatment with 2 g. daily is given over a long period. In refractory cases this dosage may be required and should be supplemented with 2-6 g. potassium chloride (sufficient to maintain a normal serum-potassium level). In less severe cases which respond quickly a smaller dose of chlorothiazide (1·0-1·5 g. daily) may suffice; and for maintenance therapy the drug may be given intermittently on three or four days each week.

Chlorothiazide (Diuril) in the Toxaemias of Pregnancy

FINNERTY, F. A., BUCHHOLZ, J. H. AND TUCKMAN, J. (*J. A. M. A.*, **166**: 141, 1958) from the Georgetown University Medical Division and the Georgetown and George Washington University Obstetric Divisions, District of Columbia General Hospital, and the Columbia Hospital for Women observe that the hypotensive and diuretic properties of chlorothiazide were evaluated and compared with acetazolamide in 144 pregnant women with hypertension, oedema, albuminuria, or other manifestations of toxaemia. Chlorothiazide was given alone in 85 patients, alternately with acetazolamide in 43, and simultaneously with acetazolamide in 16. The average effective dose was found to be 1 g. per day by mouth. It caused an excellent diuresis, with reduction of oedema, weight, blood pressure, and albuminuria. The reduction in arterial pressure after administration of chlorothiazide was greater than that after acetazolamide. The diuresis and blood pressure reduction after chlorothiazide and acetazolamide given simultaneously was greater than that after either drug alone. The lack of the development of drug resistance and absence of significant toxicity make chlorothiazide a valuable drug for the prevention and treatment of the toxaemias of pregnancy.

CURRENT TOPIC

SURVEYS*

"The business of the annual meeting of the General Assembly shall be :

* * * *

"To instruct the Council concerning investigations to be taken in the pursuit of the objectives of the Association" [By-Law 15 (x)].

A number of surveys have been undertaken; some for the purpose of studying and reporting on the professional problems in the different countries; some to organize an exchange of information on matters of interest to the medical professon; and others to sample the opinions, interests and attitudes of the doctors of the world by promoting closer ties among medical associations. All surveys assist in maintaining the honour and protecting the interests of the medical profession attaining higher levels of health; and promoting world peace.

These surveys are available in various forms, namely : specific publications (Chapter X); *Bulletin* and *Journal* articles; and documentation of the World Medical Association. Financial considerations have limited the number of specific publications of surveys; and limitations of interest in the subject or inability of the member association to supply the information have been contributing factors in publication.

On the whole, the surveys of The World Medical Association must be regarded as sampling of the subject rather than exhaustive research on it. All surveys have given special consideration to the opinion of the medical profession in the country relative to the subject—a unique and important aspect, in a decade during which the opinions of governments and politicians have been expressed on an ever increasing number of medical fields.

1946—1948

The International Medical Congress in London (1946), the Organizing Committee and the 1st General Assembly of The World Medical Association initiated surveys on :

The status of the medical profession and medical war crimes—Dr. J. A. Pridham (U.K.) was Chairman of the War Crimes Committee that recommended that the 1st General Assembly solemnly condemn the crimes against human beings committed by certain members of the medical profession and that every doctor, at the time or receiving his medical degree or diploma, be required to pledge himself to respecting the human dignity and moral liberty of humanity.

The survey on the Status of the Medical Profession in the various countries covered such aspects as medical man power; professional organizations' environment and trend in medical practice, and the community or national standing of the doctor as compared with other professional groups. This investigation was published in 1949-1950 under the title "The Medical Profession in Twenty-Three Countries" and the report included some concepts and principles and a summary of recommendations.

The 1st General Assembly directed that surveys be undertaken and reports prepared on the subjects :

Advertising of cures and medicines in the lay press ("Advertising and Sale of Secret Remedies and Appliances") and *Unqualified and unauthorized medical practice* ("Unqualified Medical Practice")—Progress reports on these two investgations were submitted to the IInd General Assembly.

Cancer-nutrition relationship—The IInd General Assembly directed that an investigation be undertaken to ascertain the feasibility of cooperating with other international organizations in a survey of cancer with special reference to its relationship with nutrition.

Factors affecting health—The establishment of a Committee on Medical Science and Standards of Medical Care was recommended by IInd General Assembly. The frame of reference of the committee was to investigate, accumulate and study the factors affecting the health of people and in the light of its findings to evaluate new proposals and recommend programmes of action.

Excess and shortage of doctors—In order to provide constructive and factual assistance in solving the problem of resettlement of refugee doctors the Council at its 2nd Session instigated an investigation to determine through the member associations the countries that had a need for and desired additional doctors to care for the medical needs of their people.

1948—1949

The Council at its 5th Session approved the transmittal of the report on "Advertisement and Sale of Secret Remedies and Appliances" and "Unqualified Medical Practice" to the IIIrd General Assembly and the Assembly authorized the issuing of these with the indication that the survey was incomplte and that the material released was "Report I" on each subject.

1949—1950

The Council at its 7th Session directed that investigations be undertaken and surveys prepared on the following subjects :

Hospital facilities—A survey of the types, kinds, numbers and bed capacity of the hospitals within the various countries.

Availability of new drugs and pharmaceuticals—An inquiry on the source, adequacy of supply, restrictions and government regulations of six newly developed pharmacentical preparations and an equal number of more effective preparations of newer drugs.

Red Cross activities in peace time—An investigation to determine the extent to which the Red Cross through its component national societies engaged in medical care either through its own hospitals and dispensaries or in cooperation with other organizations including the use of itinerant Red Cross consultants using mobile units.

Universal marking and non-interchangeable couplings for medical gas cylinders—At the request of a member association the 8th Council Session authorized an investigation to determine the feasibility of establishing universally recognized marking and non-interchangeable couplings for medical gas cylniders as a safety measure.

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* From the First Decade Report of W. M. A.

Information from member associatons indicated wide variance in the marking of cylinders and questioned availability of non-interchangeable couplings. The 9th Council Session referred the findings to the International Standardization Organization and requested it to make suitable recommendations.

Legal qualifications for medical and dental practice in foreign countries—The survey undertaken in behalf of the resettlement of refugee doctors had resulted in the accumulation of information relative to the legal requirements involved when a doctor wished to establish his practice in a country of which he was not a native. The Council at its 8th Session directed that the original survey be continued in order to obtain answers from all member countries; that it be extended to include requirements for dental as well as medical licensure; and that the association publish a booklet of the information obtained.

Fraudulent advertising and unqualified practitioners—In preparing the surveys on "Advertisements and Sale of Secret Remedies and Appliances" and "Unqualified Medical Practice" for publication, the Medical Care and Allied Subjects Committee suggested at the 9th Council Session and IV General Assembly that these two surveys indicated a need for constructive program which would embody :

strengthened national control through the national medical association with guidance from W.M.A., if desired;

an increased number of qualified doctors in areas having a doctor shortage;

increased opportunities for medical training, national and foreign, undergraduate and post graduate, in accord with the national need; and

assistance to medical schools in the form of qualified lecturers.

The General Assembly adopted these recommendations as basic principles toward solving the problem.

1950—1951

Cancer survey—The Vth General Assembly received a member association request that the association undertake a global survey relative to the racial, geographic and nutritional factors in relation to the incidence of cancer. The Assembly directed the Council to consider the feasibilty of implementing the suggested survey.

In view of the action taken at the IInd General Assembly directing that the Association offer cooperation with other international organizations toward accomplishing comprehensive surveys on the nutritional factors influencing cancer incidence, the Council referred the suggestion to relevant organizations with an offer to assist in facilitating the suggested survey.

Universal markings for medical gas cylinders—The Council reported to the Vth General Assembly that its directive to investigate ways and means of preventing accidents by standardizing the marking and couplings for medical gas cylinders had been referred to the International Standardization Organization. International conferences on this subject were held and consideration was being given to standardizing the method and location of the markings; color indicating content; languages to be used; and the development and use of non-interchangeable valve attachments.

Hospital survey—The Vth General Assembly directed that the hospital survey which had been undertaken be broadened to include a section relative to "Personnel" and that the survey not be issued until the additional information was available for inclusion in the report.

Excess and shortage of doctors—The General Assembly received a request from a member association that an extensive survey be undertaken by The World Medical Association to determine the countries that had an excess of doctors and those having a shortage of doctors for the adequate care of the population. As a result of this survey it was suggested that recommendations be drafted which would lead to more equitable doctor distribution.

The Assembly accepted the motion and directed the Council to give consideration to the feasibility of conducting the survey and drafting the suggested recommendations.

1951—1952

Legal health requirements for motor vehicle licenses—A questionnaire was issued to the member associations in order to ascertain the statistical relationship between each country's motor vehicle accident rate and physical disabilities of the operator of the vehicle; the legal health requirements for obtaining an operator's license and the opinions of the member associations as to the adequacy of the current health requirement; its application; and whether or not additional safeguards were deemed desirable by the medical profession of the country.

Excess and shortage of doctors—In compiling a questionnaire to be sent to the member assocations relative to the excess or shortage of doctors in their countries, the Council, at its 14th Session directed that in addition to ascertaining an estimate of the excess or shortage, the association be invited to comment upon its cause and the possibilities for solution through action by the medical profession of the country.

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Member associations in countries that had received the displaced refugee doctors for resettlement were invited to comment upon the relative success or failure of these doctors in the new country.

1952—1953

Excess and shortage of doctors—The Council informed the VII General Assembly that it had found it impossible to frame recommendations for the equitable solution of the problem of excess and shortage of doctors in various countries as the problems involved were obviously national ones that only the medical profession in each country could solve and recommended that the survey be discontinued.

The Assembly refused to accept the recommendation of the Council and directed it to continue its study in an earnest effort to formulate a solution to the problem.

Retirement and pensions for doctors—The VIIth General Assembly directed the Council to initiate survey of the principles of the existent retirement and pension plans available to the doctors in member countries.

1953—1954

Excess and shortage of doctors—In view of the direction of the VIIth General Assembly that Council continue to try to find a solution to the problem of excess and shortage of doctors, the Miscellaneous Business Committee directed that a new questionnaire be issued to national medical associations and that this questionnaire and those previously received be summarized. This survey revealed the following as a result of five years' study of the problem :

1. Only half of the member associations were apparently interested enough in the problem to answer and return the brief questionnaires that were issued.
2. Legislation, such as citizenship and licensure requirements, in the majority of countries make free exchange difficult.
3. Language, customs and purely national considerations prevent full exchange in many countries in which language is not a factor.
4. The problem of displaced doctors was one of a temporary nature and one which all democratic nations endeavored to alleviate. The problem of current and future shortages and surpluses as a continuing problem is one which should be solved by the medical profession of each nation upon realistic evaluation of its cause and should not constitute a problem for consideration at the international level.

The Council accepted this summary as conclusive and directed that the Secretary General and the Medical Education Committee keep this item on their agendas and report back to the Council only when there is a new development in the field.

World population—The VIIIth General Assembly received a member association motion requesting that the Association undertake a realistic study of the problem of global population increase and the relation of the responsibility of the medical profession toward the solution of this problem. The Assembly directed the Council to place this subject on its agenda in order to consider the feasibility of carrying out the study and providing the specific recommendations suggested in the motion.

1954—1955

Professional relations with the lay press—The Council at its 23rd Session directed that a questionnaire be sent to the member associations to ascertain the status of the relationship between the medical association and the lay press; the problems the association had in this regard; and the principles of the public relations program which it had established to promote mutual understanding between doctors and reporters.

1955—1956

Status of the profession in Europe—Dr. P. Cibrie, Secretary for Europe and Africa submitted a progress report on the status of doctors in the various countries in that area. This report covered the following topics :

Status of the medical profession
Ratio of doctors to inhabitants
Medico-social structure
Doctor's retirement plans
Jurisdiction
Current needs and problems of the medical profession.

Medical profession and the lay press—The answers from the questionnaire issued to member associations on the relationship it had with the lay press and its program to promote better public relations was compiled into a survey article and published in the *World Medical Journal*.

NOTES AND NEWS

Tributes to Work of W.H.O.

"The ultimate success of all our schemes, whether in the field of health or in other fields, depends largely on the measure of public co-operation that is forthcoming. The aid offered by international organisations like the World Health Organisation is itself illustrative of the spirit of co-operation that animates its endeavour in this field," said Mr. Bishnuram Medhi, Governor, when he presided over the World Health Day celebrations at the Madras Medical College on July 26, 1958.

Dr. V. R. Thayumanaswami, Director of Medical Services, reviewing the progress that had been made in the State during the last decade in the fight against diseases, said that the general death rate had been brought down from 21·2 in the previous decade to 15·2; infant mortality from 159 to 114; maternal mortality from 8,800 to 5,400; cholera death rate from 0·47 to 0·27; smallpox from 0·14 to 0·09; plague from 0·03 to 0·003; fevers, mainly typhoid, brought down from 4·25 to 2·57; dysentery and diarrhoea from 1·64 to 1·13; respiratory diseases from 2·17 to 1·61. The figures are no doubt impressive, but not such as to be proud of. "We have embarked on more ambitious programmes for the next decade. We are changing over from control to eradication and malaria is engaging our foremost attention." On the curative side the number of medical institutions had increased to 503 as against 347 in 1947. The number of beds had increased to 19,320 from 7,871 in 1947. Thus the number of institutions and the number of beds at present were nearly twice and thrice respectively compared to those in 1947, he said.

Dr. Lakshmanaswami Mudaliar, who reviewed the work of the World Health Organisation during the past ten years, said that at the very first meeting of the WHO in 1948, the Indian delegate sponsored the establishment of regional organisations of WHO and a resolution was adopted at that meeting to the effect that regional organisations should be established, taking the geographical area into consideration and the first Re-

gional Organisation to be established was the South-East Asia Regional Organisation with its headquarters in Delhi. The World Health Organisation got generous support from various organisations like UNICEF, Colombo Plan, Technical Assistant Programme, etc. The eradication of malaria, tuberculosis, venereal diseases and maternity and child welfare were actively pursued under its auspices.

The World Health Organisation was also taking note of many other things. One of the most important resolutions that was passed was with regard to the peaceful uses of atomic energy. Wherever atomic energy was produced, there was bound to be the problem of atomic wastes. Hence public health officials must be associated with the Atomic Energy Commission. People who dealt with radiology had realised that the radiation hazards were very severe and that indiscriminate use of x-rays must be avoided. In this connection he suggested that every radiological centre must be under the supervision of the public health authority and a system of licensing should be introduced.

Drugs Consultative Committee Meeting

A plea for the improvement of standards of the drug industry and trade in the country was made by Shri V. K. B. Pillai, Secretary, Union Ministry of Health, while inaugurating a meeting of the Drugs Consultative Committee in New Delhi on July 16.

Representatives of almost all States attended the meeting, which was presided over by Shri S. K. Borkar, Drugs Controller, Government of India.

Shri Pillai said that with the tempo of industrial development rising, the problems of enforcement of the Drugs Act, which was promulgated ten years ago, were likely to be more intricate. It was possible that the State Drugs Controllers would come across difficulties not envisaged in the Act or the Rules. They should, however, endeavour to enforce the law which gives the country uniform standards of drugs and uniform regulations, and build up healthy conventions by taking the trade and industry into their confidence.

Shri Pillai said that he was having periodical conferences with representatives of industry and trade in important centres in the country at which the State Drugs Controllers were also present. In future he declared that he would like to associate the drug control authorities of all the States in these conferences. He welcomed the departure from the established procedure marked by the meeting the Consultative Committee would have with representatives of the manufacturers and the trade today.

He said that he would like the Committee to consider how to bring about uniformity in the control over advertisements falling under the Drugs Act since most of the State Drugs Controllers were also appointed officers for enforcing the Drug Advertisement Control Act.

The Committee then generally discussed the problems arising out of the enforcement of the Drugs Act in various States.

The Drugs Consultative Committee has recommended that *bona fide* Ayurvedic and Unani Drugs should not be controlled under the Drugs Act. The Committee made this suggestion after a discussion of a representation by the All India Unani and Tibbi Association.

The Committee has proposed that manufacturers of patent and proprietary medicine should market their products in the form of tablets or capsules in strip packings so as to facilitate their purchase in original packings. The Committee has also suggested that patent and proprietary medicines in the form of liquid should also be sold in consumer packings.

The Committee discussed the conditions to be complied with by manufacturers of drugs, particularly those relating to building and accommodation with reference to practical difficulties encountered in enforcing them. The non-availability of competent technical personnel with adequate experience in the manufacture of drugs was stated to be a major handicap in the enforcement of the provisions of Drugs Rules. The Committee considered at length measures for ameliorating the shortage of technical personnel.

The working of the Drugs and Magic Remedies (Objectionable Advertisements) Act in the States was reviewed and further steps to be taken for its enforcement were discussed.

The Committee met the representatives of the All India Chemists' and Druggists' Federation and went into their difficulties in maintaining registers for retail sale of poisons, biological products and spirituous preparations containing not less than 3 per cent alcohol.

Control of Dangerous Drugs in Hospital

The Central Health Services Council of U.K., impressed by the hazards of careless handling in hospitals of dangerous drugs and poisons, set up a sub-committee to consider the control of these substances. Foremost among the sub-committee's recommendations (Central Health Services Council: Report of the Joint Sub-committee on the Dangerous Drugs and Poisons in Hospitals—H. M. Stationery Office, pp. 25, 2s) is one that no hospitals should be entirely without the services of a pharmacist, and that the purchase and storage of dangerous drugs and the inspection of ward drug cupboards should always be under the control of a pharmacist. The sub-committee emphasises that drugs should not be administered without a written prescription. The relevant Acts make it quite clear that only in real emergency can they be administered on verbal or telephoned instructions, and that the order must be confirmed by a written prescription within twentyfour hours. This provision is too often neglected, and not uncommonly nurses administer drugs on their own initiative.

The sub-committee recommends that the abbreviations P.R.N. and S.O.S., being open to more than one interpretation, should be abandoned; that a uniform ward order book should be used throughout the National Health Service; and that the dose of medicine administered should be checked against the original prescription, and, when a new prescription sheet is started, all the drugs which the patient is receiving should be brought forward on to it. It often happens that administration of a medicine once prescribed is continued until the prescription is cancelled by the doctors.

The sub-committee reasonably suggests that medicines other than poisons, and also reagents, disinfectants, and so forth, be kept in locked cupboards. Its condemnation of the practice of some sisters of accumulating unofficial stocks is justified. Most hospital pharmacists will have seen, during ward inspections, drugs which are out of date and potentially dangerous; such stocks are often stored in improperly labelled containers, and prohibition of relabelling of drugs by nurses is an essential precaution.

General adoption of its recommendations, writes *Lancet* (Annotation, *Lancet*, **1** : 442, 1958), would greatly reduce the risk of accidents or misuse.

Working of Government Narcotics Department

The report of the Opium Department (now renamed the Narcotics Department) for the year ending September 1956 was made available on July 19, 1958.

In 1955-56, the department made a net profit of about Rs. 35 lakhs, which was slightly higher than the profit of the previous year. Over half a million pounds of opium were exported, mostly to the U.K. and the U.S.A. The former imported about 293,000 lbs. and the latter 200,000 lbs. Other buyers in small quantities were France, Italy, Japan and Germany. These exports do not include what was sold to Pakistan who indented for about 190 maunds, as against about 720 maunds indented by all the State Governmenss of India taken together. The total quantity of opium produced was 9,300 maunds.

Poppy, from which opium is extracted, is cultivated in Uttar Pradesh, Rajasthan and Madhya Pradesh. The total area planted with poppy is about 43,500 acres, of which Rajasthan and Madhya Pradesh have about 31,000 acres between them and U.P. has the balance of 12,500 acres. About 7,000 maunds of opium are produced in the first two States together and 2,300 maunds in U.P. Cultivation is carried on by licensed cultivators. Their number has been declining in recent years, especially in U.P. and the decline has been out of proportion to the fluctuations in the area under cultivation, which may be an indication that there has been some sort of consolidation of holdings in poppy cultivation, but in U.P. the average yield per acre has gone down owing to "unfavourable weather and prevalence of insects and diseases that adversely affected the poppy crop". However, in Rajasthan and Madhya Pradesh it is improving owing partly to "weeding out the undesirable and dishonest cultivators, and largely to more effective control of the department, compelling the cultivators to tender their entire produce to Government".

A few cases of illicit cultivation still occur. Evaders of the opium monopoly find smuggling easier to manage than illicit cultivation. Attempts at smuggling are naturally more common in Rajasthan and Madhya Pradesh (in the areas bordering on Rajasthan), where law and order are comparatively lax. In the suppression of illicit trafficking in narcotic drugs, the Narcotics Intelligence Bureau, established by the Government of India under Article 11 and 12 of the Geneva Convention of 1936, maintains liaison with the customs, police and excise authorities in India and abroad.

Uttar Pradesh's opium is processed in the Government opium and alkaloid works at Ghazipur and Rajasthan's and M.P.'s in the Government opium factory at Neemuch. Only the former makes medicinal opium, the demand for which has been increasing from firms in India and abroad.

Medical Facilities for D.P.'s

The Union Ministry of Rehabilitation is considering co-ordination of health schemes for displaced persons with the overall plans for medical facilities in West Bengal.

This step is expected to result in an integrated health plan for the entire State and remove the possibilities of overlapping.

At present, the Central Government are spending about Rs. 65 lakh for providing medical facilities to D.P.s. Apart from facilities available to D.P.s in Camps, there are five mobile medical units which are run for the benefit of displaced persons in different colonies. These units, primarily meant for domiciliary treatment of tuberculosis patients, also provide medical treatment to other displaced persons.

Special arrangements have been made for reservation of beds in different hospitals for displaced tuberculosis patients, at the cost of over Rs. 18·5 lakh. Up to March 1958, nearly 600 beds had been reserved in different sanatoria for tuberculosis patients. Another hundred beds were being constructed.

In addition to reservation of beds, displaced tuberculosis patients and their families are allowed other benefits also. Dependents of tuberculosis patients who are in hospitals are paid a monthly grant of Rs. 45. In case a patient is awaiting admission to a sanatorium, he is paid Rs. 65 per month for maintaining himself and his family. On the discharge from a sanatorium, the tuberculosis patient is given financial assistance of Rs. 20 per month and free medicines for a specific period. The number of families who are receiving such assistance is over 5,000. The expenditure on providing these facilities in 1957-58, came to about Rs. 24 lakh.

Displaced tuberculosis patients who are awaiting admission to hospitals are paid a daily diet allowance of Rs. 2·50. The number of families who are receiving such assistance last year was about 1,000 and the expenditure amounted to about Rs. 10 lakh.

More Beds in W. Bengal Hospitals Wanted

The West Bengal Government has asked the Union Government for more than Rs. 7 crores and Rs. 1 crore as capital and recurring expenditure to provide 6,000 additional hospital beds in the State.

Many conferences have been held between State and Central health officials in regard to the scheme. One more is expected shortly in Delhi.

The State Government contends that out of over 3·1 million displaced persons in West Bengal, there is special hospital arrangemens only for about 250,000 camp refugees. It feels that there is no justification to have a separate set-up for 8 per cent of displaced persons, leaving over 90 per cent to struggle and claim part of

the inadequate hospital facilities available for the normal population of the State.

A census of hospital patients taken by the Government some time ago shows that about 6,000 beds in different hospitals were occupied by displaced persons. The extreme congestion prevalent in State hospitals is due to the fact that they have to cater to the needs of displaced persons in addition to those of the people of West Bengal.

About 1·4 million of the displaced persons are concentrated in and around Greater Calcutta, including 24-Parganas. The incidence of tuberculosis is the highest in this area. It has therefore been stipulated that about 50 per cent hospitals to be set up would have to be in this area.

The State Government has detailed, in its plan submitted to the Centre, the number of hospitals needed in Greater Calcutta, in district and subdivisional towns and the money needed (Rs. 7 crores) for establishing the hospitals. On the basis of the per capita expenditure of Rs. 3·2 in the State in a year, the recurring expenditure for the displaced persons amounts to over Rs. 1 crore.

Shortage of medical facilities for the people of West Bengal is no less acute, says a spokesman of the West Bengal Health Directorate. A well-coordinated plan to benefit all persons, including refugees, is what is needed to improve the hospital facilities in the State.

E.S.I. Scheme in Mysore Inaugurated

The Employees' State Insurance Scheme, in operation in 63 industrial centres in the country, was extended to Bangalore, one of the biggest industrial centres in the South on July 26. The State Chief Minister, Mr. B. D. Jatti inaugurated the scheme at a meeting held at the Town Hall, before a large gathering of representatives of employers, employees and the general public. About 50,000 factory workers will derive the benefit under the scheme.

Mysore State which is well-known as an industrially advanced and progressive State had lagged behind in the provision of this important amenity for the employees, but the delay has been more than compensated and Mysore has taken a lead in that in the working of this scheme, the workers' families are being brought in. Mysore is the first State to do so in the whole country.

Col. V. M. Albuquerque, Director-General, Employees' State Insurance Corporation, welcoming the gathering, expressed gratification that Mysore State had taken this great step forward in the cause of labour welfare. He was happy to participate in the function as it was the first occasion when families were being brought within the purview of the scheme in the country. At the present day, with the necessary finances assured and with the scheme working in 63 industrial centres, covering over 12 lakhs of employees, they were happy that the Mysore State had taken this great step.

Radioactive Strontium Has No Effect on Baby Rabbits

Radioactive strontium, which is generated in nuclear explosions, produced no change in the bones or blood of baby rabbits given heavy injection, the Medical Research Council of U.K. says in its annual report for 1956-57.

But while two-day-old rabbits were unaffected by the injection rabbits aged 6-8 died six months later with multiple tumours and varying degrees of anaemia, the report states.

Rabbits were chosen for the experiments because their bones are similar to those of man and can absorb almost all the high radiation produced by the decay of strontium-90.

One-year-old rabbits died of anaemia and leucopenia in about six months.

The injections of strontium-90 were proportionate to the body weight of the rabbits and were "relatively enormous amounts" compared with those from the fall-out of nuclear weapons.

The report suggests that the "remarkable tumour incidence in one age group" can be explained by the different type of bone growth found at different ages.

Bone-growth in the youngest group is so rapid that strontium is absorbed and rapidly removed in the process of "normal remodelling", the report said.

Occupational Therapy Centre in Nagpur

Mr. Y. B. Chavan, Chief Minister of Bombay, inaugurated on July 27, an occupational therapy centre and workshop at Nagpur, the second of its kind in Asia. The first such centre is functioning at the K.E.M. Hospital, Bombay.

The centre, which is located in the Radiology Department of the Nagpur Medical College Hospital, will conduct a two-year course. Twenty students will be trained in the science of occupational therapy to help crippled and disabled persons learn the use of their limbs for different arts and crafts.

The Chief Minister said that it should be the endeavour of all to bring medical aid to the poorest. He hoped that students trained at the Nagpur centre would do their best to help the crippled.

Bombay's Health Minister, Mr. M. S. Kannamwar, said that a granf of Rs. 20,000 was earmarked for the new department besides Rs. 10,000 donated by Mrs. Kamla Nimbkar, President of the All-India Occupational Therapist Association, for establishing a workshop.

Import of X-ray Films

The Government of India have decided that quota licences for the import of x-ray films will be granted to established importers during the current half year, April-September 1958, on the basis of a quota of 75 per cent general and 75 per cent soft.

When the import policy for the current half-year was announced it had been stated that the policy for x-ray films would be announced after the established importers had re-established their quotas for this item on the basis of imports made by them during the basic period. The basic period had been extended up to and including 1956-57. The quotas for this item have now been re-established.

Any interim licences which may have been granted by the licensing authorities to established importers on an *ad hoc basis* will be adjusted in granting quota licences on the basis now announced.

Reservation of Seats in All-India Medical Institute

The quota of reserved seats for Scheduled Castes and Scheduled Tribes candidates seeking admission to the M.B.B.S. course of the All-India Institute of Medical Sciences, New Delhi, has been raised from 10 to 20 per cent. The increase is effective from the current session. The total number of seats available for admission to the course is 50.

This decision has been taken in accordance with the Government of India's policy regarding the reservation of seats in educational institutions for Scheduled Castes and Scheduled Tribes.

Fellowships for Dental Surgeons in U.S.A.

The President, Madras State Branch, All-India Dental Association in a communication says that through the good offices of the All-India Dental Association, two fellowships and staff appointments have been offered to the members of the Association in Pedodontia at the Murry and Leonie Guggenheim Dental Clinic, New York, for the year 1959-60, for a period of 10 months with a starting salary for Fellows and staff members at $190 per month, subject to Government taxes.

The Forsyth Dental Infirmary for Children at Boston, U.S.A. is also awarding two fellowships and staff appointments in Pedodontia, with a starting salary for Fellows and staff members at $35 per week, subject to Government taxes.

Further particulars can be had of Dr. C. S. Raman, President, Madras State Branch, All-India Dental Association, No. 322/23, Linghi Chetty Street, Madras 1.

Family Planning

In order to provide training facilities regarding the methods of family planning, the Government of Bombay has sanctioned the establishment of seven family planning clinics, one each at the following Government medical colleges.

The Grant Medical College, Bombay; the B. J. Medical College, Poona; the B. J. Medical College, Ahmedabad; the Medical College, Baroda; the Medical College, Aurangabad; the Medical College, Nagpur; and the M. P. Shah Medical College, Jamnagar.

The necessary staff and other ancillary expenditure have also been sanctioned.

Smokeless City in the Offing

A recent study by the Fuel Research Institute, Dhanbad, has revealed that, on an average, two tons of dust and soot are deposited on Calcutta every day. Alarmed by Calcutta's smoke problem following the expert assessment, the West Bengal Government has prepared a scheme to make the city smokeless. It has been sent to the Union Government for approval.

The scheme includes a proposal to build a gas grid which will ultimately bring 30 million cubic feet of gas per day to the city from the coke oven plant at Durgapur. The Oriental Gas Company at present supplies only three million cubic feet of gas—against a demand of eight million a day. The cost of the gas grid has been estimated at Rs. 3½ crores.

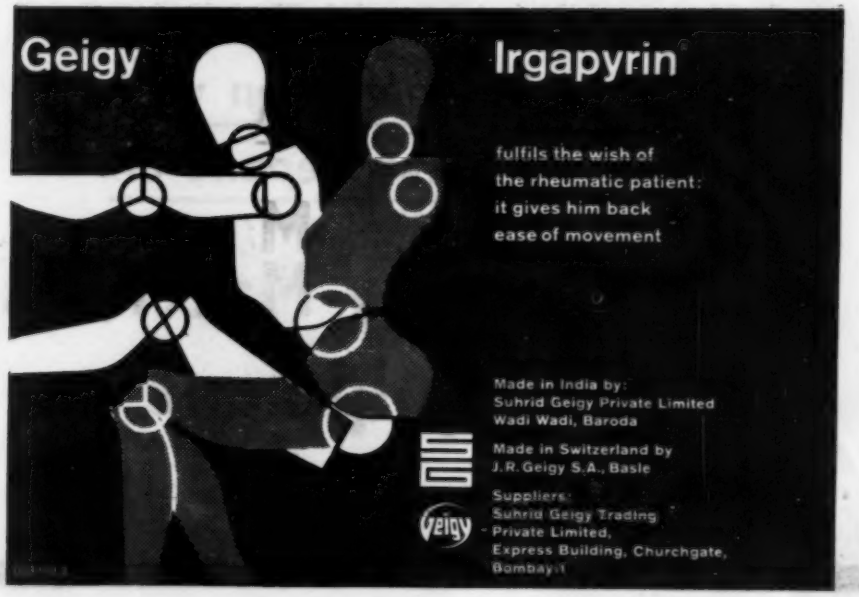
Divided into three phases, the scheme proposes to start with a daily supply of eight million cubic feet of gas, rising to 15 million in the second phase and ultimately to 30 million. The manufacture of smokeless coke for domestic use in the city is also planned. This information was given at a meeting of the Indian Council of Economic Affairs in Calcutta on July 16.

REVIEWS

Livingstone the Doctor, His Life and Travels—A Study in Medical History—By Michael Gelfand, O.B.E., M.D., F.R.C.P., with a foreword by C. Hely-Hutchinson, President, British South Africa Company. Board bound, 9″ x 8″, 333 pages. Basil Blackwell, Oxford, England, 1957; price 42*s.* net.

Since Livingstone's death, during the past 80 years, quite a number of books have appeared concerning Livingstone as a Missionary, Traveller or a Geographer, but very little seems to have been devoted to give adequate treatment of Livingstone, the Medical man. The author was prompted to write this book to offer a satisfactory answer to fill up this apparent void. The mainspring of Livingstone's labours was, clearly enough, his missionary zeal, and it was only after Livingstone had convinced his father that this was his intention that he received the parental blessing upon his medical studies. For Livingstone, the cure of bodies, however important, was not enough unless accompanied by the cure of souls. For him Christianity and medicine were indissolubly linked and both were necessary in order to fulfil God's will. It is however of great interest to know how much his medical training contributed to his success in a country heavily infested with malaria. The secret of his success lay not only in his grim determination, but in his knowledge of the correct and constant use of quinine whenever the fever revealed itself. Livingstone sent numerous letters and despatches to England stressing that the African fever need not be feared, as the remedy lay in his famous pill combined with large doses of quinine. Thus the European could survive the climate, and once settled, they could practise legitimate trade, drive out slavery and also successfully establish Christianity.

This book is well documented, pleasant-reading and brings out an aspect of David Livingstone's life and thoughts which do not seem to have been sufficiently stressed earlier. A book well-recommended for reading not only by the general public but specially by the medical fraternity.



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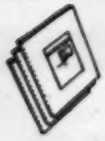

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Neomycin—Its Nature and Practical Application—Editor : Selman A. Waksman. The Williams and Wilkins Co., Baltimore, Maryland, U.S.A., 1958. Pp. X+412. Price $5.00.

A book edited by Waksman is expected to be an important publication. This volume on neomycin is indeed an excellent treatise on an antibiotic of comparatively recent origin. Neomycin has not been very much in the know in this country, perhaps because many of the other antibiotics currently in use in India already cover a wide range of micro-organisms. On going through the book it however appears that a more comprehensive trial of this antibiotic by our medical profession is not only desirable but would also be justifiable as it has special features to claim superiority in certain types of infectious and pathological conditions.

Neomycin appears to be specially indicated in surgical practice. The vast clinical literature presented in the book on the beneficial functions of this antibiotic in pre- and post-operative conditions in bowel surgery, in the treatment of surgical shock, peritonitis, urinary tract infections and wound infections, throws considerable light on the usefulness of this new therapeutic agent. The merits of the drug have been discussed thoroughly to demonstrate that neomycin is the ideal antibiotic for such conditions.

The chapters, devoted individually to the various aspects of the subjects, have been written by eminent authorities in their respective fields. The indications, advantages as well as the difficulties and drawbacks have been lucidly discussed. A vast storehouse of experience is therefore at the disposal of the readers. A few chapters deal with the use of the antibiotic in medical practice, e.g., diarrhoeal diseases and enteric infections, dermatitis and skin infections, etc. The chapter on the use of neomycin in aerosol, where topical applicaion to the bronchial tree has enabled the antibiotic to control bronchopulmonary infections, gives information worth consideration.

Special chapters dealing with neomycin therapy in veterinary medicine, animal nutrition and plant diseases will interest those who specialise in these fields.

The chapters on the cosmetic uses of this antibiotic are interesting. It appears that perhaps neomycin is best suited for incorporation in cosmetic creams, lotions, ointments and soaps for suppression of body odours and cure of disfiguring skin conditions. The merits of the drug for such uses are fully discussed.

Those interested in research or laboratory work on antibiotics, will find in Section I and II details on methods of approach to the different problems and the techniques employed for investigations. These will be of immense value to such students.

The chapter on neomycin preparations is also very informative for those interested in drug formularies.

The exhaustive bibliography at the end of the book will help those interested in further studies or research projects. Appendix I giving summary of clinical uses of neomycin and Appendix II dealing with trade names of commercial preparations containing neomycin will prove useful as ready references.

The book will be very useful to the members of the medical profession, in particular to those interested in surgery.

Souvenir of the Tuberculosis Relief Association, 73, Dharmatala Street, Calcutta-13. 1958. 71 pages.

Published on the occasion of the 13th anniversary of the Association, the Souvenir contains six topical articles on the various aspects of the problem of tuberculosis in India. The articles contain valuable information on (i) Problems in underdeveloped countries (A. C. Ukil); (ii) National tuberculosis survey (P. K. Sen); (iii) Milestones in the evolution of anti-tuberculosis measures (H. K. Roy); Role of (iv) Hospitals (P. K. Chatterjee); (v) Cheap clinics (H. S. Chakravarti) and (vi) Voluntary organisations (A. Sen Gupta) in the control of tuberculosis. The Souvenir also records faithfully the achievements of the Association which has been serving the cause of suffering humanity sincerely and successfully. The Association is now building a modern hospital for chest diseases for which generous public support is solicited.

Manual of Pediatric Physical Diagnosis—By Lewis A. Barness, M.D. Paper cover, 7¾″ × 5¼″, 195 pages. Published 1957 by The Year Book Publishers, Inc., 200 East Illinois Street, Chicago, U.S.A. Price $4·00.

The text of this book first originated, like many similar books, as lecture notes for undergraduate medical students; with fresh points added each year on paediatric physical examination. It has to be agreed that physical examination of the patient, the paediatric patient in particular, is a subject by itself, involving both art and science. The practical points of physical examination of a sick child, collecting data, keeping notes and finally of correlating all these materials for a diagnosis and approach to treatment have all been well presented in this volume in a manner likely to appeal to the undergraduate student as well as to the busy general practitioner.

A Contribution to the Study of Portal Hypertension (Jacksonian Prize Essay, Royal College of Surgeons, 1956)—By Alan Henderson Hunt, M.A., D.M., M.CH., F.R.C.S. Published 1958 by E. & S. Livingstone Ltd., Edinburgh and London. Board bound with paper jacket, 10″ × 7″, 230 pages with 120 illustrations; price 40*s*. net; postage 2*s*. 9*d*.

This contribution to the study of Portal Hypertension was submitted for the Jacksonian Prize of the Royal College of Surgeons, for the year 1956. The format was dictated by the requirements of that ancient prize, limiting the essay to not more than 75,000 words. Accordngly, the author has made no attempt to summarise the vast amount of scientific work which has recently been published on the hepatic circulation and on liver disease. But this seems to have been amply compensated for by the large number of references at the end which will certainly help the more inquisitive reader for wider studies. In this book the author relates his own clinical experience. The subject has been carefully dealt with, and sympathetically presented with profuse illustrations

which make the book pleasant reading as well as highly illuminating.

Sex Knowledge for Lay People—By R. Swaroop, M.B.B.S. with a foreword by S. S. Misra, M.D., M.R.C.P. (LOND.), Professor of Clinical Medicine, Lucknow University. First edition, 1958; published by Madhuri Publishers, 15, Gokhale Marg, Lucknow, U.P. (India). Board bound with paper jacket 8½″×5¼″, 96 pages; price Rs. 3·75.

This small handbook deals with a subject which is a common but difficult one. The text has been divided into ten convenient chapters. A book of this size naturally presents only essentials and preliminaries, and in this the author has undertaken and performed a commendable job. The language is simple and almost all the illustrations are likely to be easily understood by the lay people for whom the book has been written. This book is not intended, and should not be taken, to dispense with the need for medical consultation and help where these should be necessary. Rather, the intelligent reader, with a fair amount of authoritative knowledge on the subject should be better informed about the difficulties and dangers that may be met with, and which could be solved with the medical help from a qualified, experienced and sympathetic person.

Endocrine Aspects of Breast Cancer; proceedings of a Conference held at the University of Glasgow, 8th to 10th July 1957—Edited by Alastair R. Curric, B.SC., M.B., F.R.C.P. ED.; with a foreword by C. F. W. Illingworth, C.B.E., M.D., CH.B., F.R.C.S. ED., F.R.F.P.S. Published January 1958 by E. & S. Livingstone Ltd., Edinburgh and London. Board bound with jacket; 8¼″×5¼″, 340 pages. Price 37*s.* 6*d.* net.

Cancer of the human breast has evoked keen interest for a long time, perhaps from the earliest history of mankind ever since the condition has been recognised. Strictly scientific studies of this are however of more recent occurrence, and have passed through many phases. When microscopic characters came to be known, attention was mainly focussed on histopathological studies. Then came the phase of clinical investigations into the spread and distribution of metastases and the scope of operative treatment. After this, studies seemed to have been focussed on cancer of the breast in the mouse; and these gave us very valuable information particularly in relation to genetic factors and transmissible agents. Presently our attention has been pointedly directed to studies on hormonal influences. Researches on these various aspects and phases of breast cancer studies are being carried on in various centres of the world. To review the work of these centres as well as to exchange views and information on recent developments, a conference took place under the auspices of the Glasgow University in July 1957. This volume provides a permanent record of the proceedings of this conference. The papers have been printed in the form in which they were presented, brief epitomes have been substituted, where necessary, in place of verbatim report of the discussions, and a critical commentary has been added to correlate the discussions in each section. The reading matter is divided into four main sections—clinical, pathology, hormone studies, and experimental pathology—besides a concluding chapter of a review of the conference. For convenience of reading and better understanding, each section is further subdivided into several sub-sections. The authors are all noteworthy persons, the book has been well produced and the reading matter ably presented.

OBITUARY

Dr. J. Sreemani, L.M.S.

We deeply regret to announce the death on April 24, 1958, of Dr. J. Sreemani, a founder member of the Hooghly-Chinsurah-Chandernagore Branch of the Indian Medical Association.

Dr. Sreemani was born at Chandernagore on February 4, 1877. He passed his First Arts examination in 1898 from Dupleix College (now Kanailal Vidyamandir) and joined the Calcutta Medical College. He qualified as an L.M.S. in 1905 and set up practice at Chandernagore and soon became every popular and successful. As a founder member he was keenly interested in the work of the Branch. He was elected vice-president and was president for three terms.

DR. J. SREEMANI

He served as a Councillor of the Chandernagore Municipality from 1919 to 1922 and was nominated a member of the Municipal Assembly for administering the Free City of Chandernagore in 1947.

He was connected with many public organisations of Chandernagore notably the Chandernagore Pustakalaya of which he was Treasurer from 1905 to 1950 and was a trustee until his death of the Nritya Gopal Smriti Mandir. He acted as Treasurer of all bodies formed for collection of funds in any natural calamity.

He died after a protracted illness leaving behind many relations, friends and admirers.

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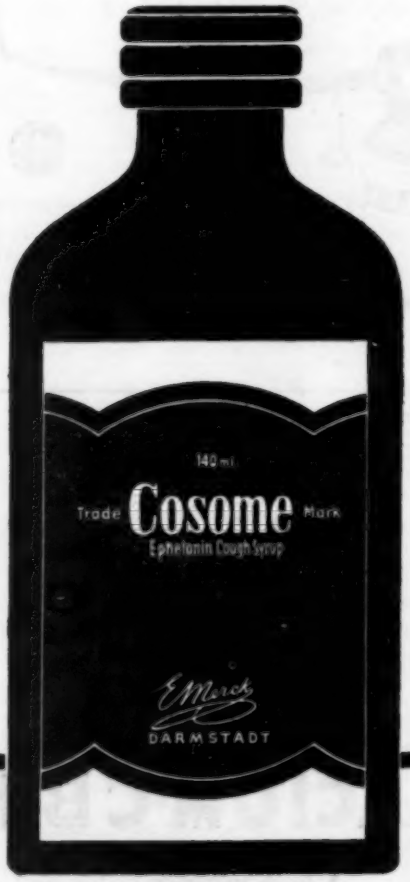

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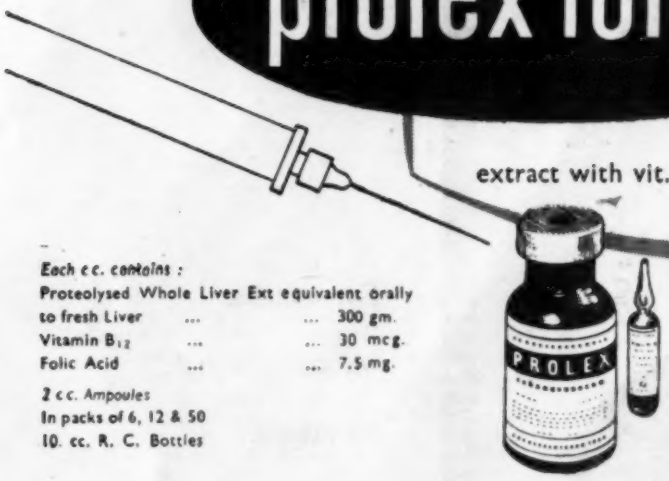

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SUPPLEMENT
Journal of the Indian Medical Association

Vol. 31, No. 4 CALCUTTA August 16, 1958

FIRST ANDHRA PRADESH MEDICAL CONFERENCE, HYDERABAD, 1957

The First Andhra Pradesh Medical Conference was held from 24th to 26th November, 1957, at the I.M.A. Grounds, Sultan Bazar, Hyderabad-Dn. The pandal was packed to capacity with distinguished guests, Reception Committee Members and delegates and visitors from all parts of Andhra Pradesh and from the neighbouring states. An Exhibition was also organised in the I.M.A. Grounds.

Dr. S. Venkateswara Rao, Chairman of the Reception Committee after extending a cordial welcome to the delegates and guests said in the course of his address that :

"Yesterday, trifurcation of the Hyderabad Pradesh by the members of Provincial Council of the erstwhile Hyderabad Pradesh Branch of I.M.A. The branches in Telengana and those of the Andhra State have now formed the Andhra Pradesh Branch of the I.M.A. Today the medical profession of erstwhile Andhra State, Telengana and erstwhile Hyderabad State have been united under one Association.

Hyderabad Medical School which was converted into Osmania Medical College in 1927 is more than a hundred years old. Postgraduate courses in all branches of medicine were started in 1955 and are being extended. Within the next few years, the medical college will be extended by the construction of the new buildings.

The Gandhi Medical College was started here by the joint efforts of the Indian Medical Association and the People's Education Society in 1955. In 1956 it was taken over by the Hyderabad Government. We are grateful to the Government for their decision to effect an all-round improvement in the college.

The aim of our Government is to nationalise the medical services in our country. But this will take many years to come. Economically we are not in a position to attempt socialisation of medical services in the near future. In the mean time our consideration must be how best to serve the people of our state within the means available. The distinction between the private medical practitioners and medical officers in services must become thinner. As it is, the private practitioner fills an important role in the medical services of the country. And so, our attempts must be to make him as efficient as possible. He must be encouraged to visit Government institutions and given every opportunity to consult specialist colleagues.

The specialist services in our districts are also meagre. This problem is interrelated with organisation of post-graduate courses in different subjects. Major K. N. Rao, Director of Medical Services has been taking keen interest in organising the postgraduate courses in different subjects. Within a few years we hope that the specialist needs in our districts will be satisfied by medical men with postgraduate qualifications turned out by our universities.

It is important that the medical services in the periphery at the taluka level must also be improved. We are glad that the Government have realised this and as practice of modern medicine is a team-work, we welcome the appointment of honorary officers to those hospitals.

In the National Extension Service Projects and Development areas, the benefits of modern medicine are being spread to villages. The villagers are in need of protected water supply and construction of modern trench latrines and these must have the highest priority. Medical officers working under Block Development officers who have no special knowledge of public health problems are not able to attend to these basic needs. Much better results could be obtained if medical officers are given freedom to act in these areas.

Much has been said about the merits and demerits of indigenous systems of medicine. But I wish to say one thing for your consideration. *Rauwolfia serpentina*, an Ayurvedic drug, was found to be useful in controlling high blood pressure. In our own country Chopra and others had done valuable work in the study of drugs. There may be other useful drugs we might derive from the critical study of these systems of medicine.

Dr. S. Venkateswara Rao
The Chairman of the Reception Committee

We have now five medical colleges in our State. If the Department of Pharmacology in each college takes up a critical study of a group of drugs, with close collaboration of clinical departments, each college working on a separate group of drugs, it will be possible in the course of a few years to assess the usefulness of all drugs in the indigenous system of medicine. Those which prove to be useful can further be investigated and incorporated in our common pharmacopoeia.

We are now at the crossroads; at no time there was greater necessity for unity in the medical profession than it is today. I appeal to all members of the profession to become members of the Association.

We, in the erstwhile Hyderabad State, have passed through a series of political upheavels within the course of twelve years culminating in the formation of Andhra Pradesh about an year back. Our experiences therefore, are quite different from those who lived in old British Indian Provinces. It is our hope that this conference will bring about an emotional integration between the medical profession in Telengana and in the other districts of Andhra Pradesh, by creating mutual understanding and good will."

Dr. B. Gopal Reddy, Finance Minister, Andhra Pradesh Government, then inaugurated the Medical Conference. In the course of his address he said at the outset that he was happy that the Andhra Medical Association and the Telengana section of the former Hyderabad State Medical Association had been amalgamated which indicated that the integration which started on November 1, 1956, had now been completed as far as the medical profession was concerned. The Minister added that they were trying to complete the process of integration of both the services at all levels very rapidly. He was confident that the process was going on very smoothly. Some signs of misunderstanding must be avoided.

Referring to the formation of the Andhra Pradesh Medical Association, the Minister hoped that at least the first set of office-bearers of the Association would be unanimously returned. Though election was a democratic process, it sometimes created tension which should be avoided.

Mr. Gopala Reddi said they could compliment themselves on the fact that they were providing more funds for schemes in the Second Plan than in the First. So far as the Andhra area was concerned, during the First Plan period they spent Rs. 104 lakhs on Medicine and Rs. 457 lakhs on Public Health. In the Second Plan a sum of Rs. 360 lakhs had been allotted for Andhra for Medicine and Rs. 367 lakhs for Public Health.

There was also a big provision for housing programmes in the Second Plan. He had also sent up to the Government, proposals for the improvement of the district hospitals in Telangana.

Mr. Gopala Reddi said that the days of the medical schools were over. They felt that the M.B.B.S. should be the minimum qualification. He was glad that a number of people were undergoing postgraduate courses in medicine and surgery. He hoped that in the next few years they would have sufficient number of postgraduates to man the medical colleges. But the Minister regretted that on the research side they were still lagging behind other countries in regard to their original contributions.

Referring to medical aid in rural areas, he recalled the decision made two years ago in Andhra that there should not be any firka without a dispensary. Now many dispensaries had been started at taluk headquarters. They should draw a similar scheme for Telengana to be completed within the next two years. They were glad that they have five medical colleges in Andhra Pradesh.

Dr. K. N. Waghray was inducted to the office of the President by Dr. U. R. Pargaonker and Dr. Chaganti Suryanarayanamurthy, outgoing Presidents.

In the course of the Presidential address Dr. Waghray said that unfortunately there was a view that admission to medical colleges need not necessarily be strictly on the basis of merit. He would submit that so far as the question of training of medical men was concerned, it was not a question of meeting any political expediency. There was a feeling that particular classes of groups in society should be given extra number of seats. While everybody must be given the fullest opportunity to find a place for himself in society, it should not be at the cost of standards of medical education.

Dr. Waghray said that there should be a uniform standard of postgraduate education for the whole country. The standard must be fixed on an all-India basis. He also expressed the view that no doctor could qualify himself to become a specialist without three or four years of general practice. Referring to prestige associated with foreign qualifications, the President said that one could go to a foreign country to specialise in a particular branch after going through general practice for some years in India. He added that the Indian Medical Association should be given an opportunity to collaborate with the planners to draw up an integral plan for medicine and public health.

Lt.-Col. K. N. Waghray
The President of the Conference

Referring to the antipathy of medical graduates to go to rural areas, Dr. Waghray said that they should look at their point of view also. Many of them hailed from middle class families and had invested much money on their education. They would like to be in places where they could set up a good practice. That was a socio-economic question. To overcome this difficulty, the Government might impart free medical education to a certain percentage of students on the condition that they would serve the Government in rural areas for a particular period.

Dr. Waghray expressed the view that the drug manufacturing industry in this country was now only "a compounding industry". Either the industry of manufacture of drugs and surgical appliances should be natonalised, or it should be brought under the direct control of the State by giving it sufficient financial aid so that the real purpose of providing these articles in sufficient quantities was assured. The question of animosity between the allopathic and indigenous systems of medicine did not arise, Dr. Waghray added. Whatever was useful should be incorporated in the allopathic system. Modern medicine had not confined itself to any "pathy". Allopathy itself had taken things from various "pathies". There was no reason why they should not be able to evolve an integrated Indian system of medicine.

Suggesting a method to end quackery, Dr. Waghray said that quackery was not the "monopoly" of the field of medicine alone. There was quackery in other fields, including politics. But so far as the medical profession was concerned, they should put down quackery as they were dealing with the lives of human beings. To end quackery, they should enrol on a register all those practising medicine and ban further entrants unless they were qualified. The registration of the quacks would be a check on them. The authorities should see that they did not indulge in any malpractice.

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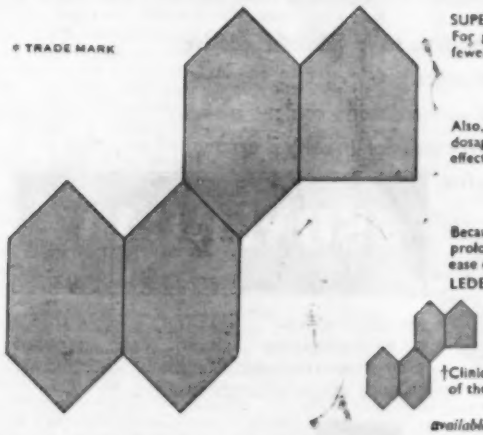

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Dr. Waghray urged that in planning, priorities should be fixed and the plan executed in some definite way. Control of infectious diseases must have the highest priority in our country.

He said that hony. medical officers fill an important plan in the Medical Services of the State and as we are short of specialists they can relieve whole-time specialists in the cities who can be utilised in the districts. Further though he was not himself an hony. medical officer at any time, he was aware of their dfficulties and it should be the endeavour of the Government to see that the service conditions would be fair and satisfactory.

Regarding the services, the watertight compartments between the Civil Surgeons and Asst. Surgeons must disappear and Junior Medical Officers must be given every opportunity to work up their specialities.

Dr. M. Vasudeva Rao, then requested Dr. B. Pattabhi Sitaramayya to unveil a portrait of the late Dr. Y. Subba Rao, an outstanding Physician from Andhra, who at the time of his death in 1948, had left invaluable research material which facilitated the discovery of the anti-tuberculous drug, isonicotinic acid hydrazide. Hetrazan, a specific cure, for filariasis, was the result of his research as also one of the antibiotics, aureomycin.

Dr. Pattabhi Sitaramayya said that it was high time that they gave up the distinction between Andhra and Telengana. In fact, the three regions, the Circars, Rayalaseema and Telengana had merged in Andhra Pradesh. Telengana was not distant from Andhra as the roots of Andhra culture were in Telengana. Dr. Pattabhi also disapproved of the artificial distinction drawn between the private medical practitioners and the doctors in Government service.

Dr. Pattabhi paid a tribute to the talents and scholarship of the late Dr. Subba Rao and said that he had won for himself world reputation."

Inaugurating the scientific session of the Conference on 24th afternoon, Major K. N. Rao, Director of Medical Services, said that the problem of India's health was a stupendous one. India with a population of 361 millions suffered from lack of good environmental hygiene, nutrition, methods of population control, and facilities in preventive and curative medicine. There were about 91,980 registered medical practitioners and an equal number of unregistered practitioners, 90 per cent of the former distributed in towns and 10 per cent in villages, and in reverse was the distribution of unregistered doctors. The birth rate in their country was 25·5 per thousand per annum and the death rate 17·2 per thousand and the increase of population 8·3 per thousand population per annum. About 100 million people suffered from malaria and about one million died of it. There were about 2½ million positive tuberculosis cases requiring medical care and 1½ million died of this disease annually. Out of 6 million total deaths in India, four per cent were due to cholera, smallpox and plagues and 4·2 per cent from dysentery. The infant mortality rate was 127 per 1,000 births. Maternal mortality in the country was about 200,000 per annum. There were about one million victims of leprosy, and two lakhs of victims of cancer and 3½ lakhs of blind people. Seven million required institutional treatment for mental diseases. There were only 31,517 nurses and 23,938 midwives in the whole of India in 1955.

Major Rao said that with the above unfortunate state in their country, it was the duty of the medical profession to examine and think of suggesting means for improving the health of the community, for increasing the number of doctors and ancillary personnel and contribute towards the encouragement of medical research.

Major Rao said that medical research in India had gained considerable momentum. Problems relating to the cure of disease were receiving attention in specialised institutions dealing with medical research. Indian medical research workers had made notable contribution.

The Indian Council of Medical Research was now organising and directing medical research in the medical colleges and research institutions.

The pattern of research, he said, was influenced by the availability of funds, Governmental or private. In their country, the Indian Council of Medical Research had a provision of four crores of rupees for medical research. The Andhra Pradesh Government had put in about Rs. 50,000 for medical research, under the Plan. The State Medical Research Committee was functioning well and had been organised as Academy of Medical Science. But still the funds available for medical research in the State were meagre. Hyderabad and Visakhapatnam were ideally suited for conducting fundamental research in medicine, he added.

BRANCH NOTES

AJMER BRANCH—The following office-bearers were elected at the annual meeting of the Branch : President—Dr. Jaldeo Prasad; Vice-Presidents—Dr. S. D. Ahuja, Dr. Amar Chand; Hony. Secretary—Dr. M. S. Mathur; Hony. Treasurer—Dr. M. L. Bagh; Jt. Hony. Secretary—Dr. R. N. Mathur; Prov. Representatives—Dr. S. P. Wanchoo, Dr. S. P. Sen, Dr. K. D. Shastri; Central Representative—Dr. Amar Chand.

ALIGARH BRANCH—An extraordinary meeting of the Branch was held on 12-4-58, Dr. D. P. Sharma presiding. After hearing the facts about an incident on 2-4-58 from Dr. D. P. Sharma, President of the Branch, the meeting placed on record ther "deep sense of regret at the unprofessional, uncourteous, unsympathetic and rude behaviour of Dr. Brij Bala," M.O. on duty at Irwin Hospital, New Delhi when attending to Dr. Sharma at the casualty room. The house considered her various actions "constitute acts of professional misconduct and insolence of office highly derogatory to the profession", and decided to request the State Branch to forward a copy of the resoluton to the Delhi State Branch.

An extraordinary meeting was held on 24-3-58. Dr. D. P. Sharma was in the chair. Several circulars from Central Office and State Branch were noted. The President Dr. D. P. Sharma welcomed on behalf of the I.M.A. Dr. P. D. Srivastava, Additional Director of Medical and Health Services, Uttar Pradesh. Dr. Srivastava in his speech spoke about the medical and health aspects of the second Five-Year Plan. After the speech Dr. Srivastava replied to several questions. A group photograph of the members and guests was taken. The meeting terminated after an At Home.

ALLAHABAD BRANCH—The members of the Branch met Dr. S. C. Sen, a former President of the I.M.A., Capt. H. N. Shivapuri, President and Dr. M. M. S. Siddhu, Hony. State Secretary of U.P. State Branch, at a lunch on 6-2-58 at Barnetts' Hotel. Dr. Sen discussed problems of the profession and appealed to the members for decent contributions to the I.M.A. Central Bulding Fund.

A scientific meeting was held on 21-2-58, when Dr. A. Mukherjee was At Home to the members. Dr. R. R. Koty opened a discussion on Persistent Omphalomesenteric Duct. Many took part.

A clinical meeting was held on 22-3-58. Dr. M. Razi opened a discussion on Peptic Ulcer Syndrome. Some members participated in the discussion. The doctors of the Northern Railway Hospital were At Home to the members.

ASANSOL BRANCH—At a meeting on 17-5-58 resolutions recording the "deep sense of sorrow at the sad demise" of Dr. S. K. Mukherjee of Domohani and Dr. Manas Kumar Roy Chowdhury of Calcutta, and conveying "its heartfelt sympathy" to the members of the families of the bereaved were adopted.

The Branch published in May the Report of its Anti-epidemic Sub-Committee. The report makes a survey of the situation in the sub-division of Asansol and recommends measures, the chief of which are :

Augmentation of public health staff in various organisations and adequate equipment; arrangement for supply of vaccine, lymph and disinfectants; improvement of water supply; increase in hospital bed strength and organisation of mobile teams by the central hospital so that camp hospitals could be arranged if necessary; provision for more ambulance cars; setting up of a machinery for health education of the public; stricter enforcement of The Bengal Vaccination, The Epidemic Diseases, The Bengal Birth and Death Registration and The Bengal Food Adulteration Acts. The report further appealed to doctors to notify all notifiable cases and requested them to set aside a fixed time for giving inoculation and vaccinations to the public.

BASTI BRANCH—Office-bearers for the year 1957-58 elected at the annual general meeting held on 2-2-58 are: President—Dr. H. D. Banerji Vice-President—Dr. H. Gandhy; Hony. Secretary—Dr. R. N. Pandya; Jt. Secretaries—Dr. B. D. Tewari, Dr. P. N. Soni; Auditor—Dr. H. P. Varma; Representative to Central Council—Dr. K. L. Srivastava; Representative to State Council—Dr. H. P. Varma.

BELLARY BRANCH—A clinical meeting of the Branch was held on 19-4-58, Dr. A. R. Fernandes presiding. Dr. Miss Anasuyamma demonstrated a case of Cerebral Diplegia. Dr. D. Prahalada Rao demonstrated a case of Entropion after operative correction, and a case of Glaucoma. Dr. G. Sreenivasa Murthy demonstrated a case of Mediastinal Tumour. Dr. B. Rama Rao demonstrated a case each of Osteoclastoma, Cancer Breast, Ectopia Vesicae and Simple Tumour Thyroid.

BENGAL PROVINCIAL BRANCH—At a special meeting (date not mentioned) of the Working Committee a resolution "deeply condoling the sad and premature death of Dr. Manas Kumar Roychowdhury" and extending "its heartfelt sympathy to the members of the bereaved family" and recalling "with the deepest gratitude the untiring devotion that the late Dr. Roychoudhury showed in rendering yeoman service to the cause of the Association and the profession" was adopted. The meeting was further of opinion "that the highest spirit of medical ethics that dictated Dr. Roychoudhury to place the cause of his suffering patient above all consideration including his personal safety has gone a long way in setting an extraordinary example which is worth emulation" by every individual member of the profession.

Among other branches under the Provincial body the following have passed condolence resolutions on the sad death of Dr. Manas Kumar Roychoudhury; Calcutta, Asansol, Howrah, Kharagpur, Jhargram and Dooars.

CALCUTTA BRANCH—A meeting of the Branch (date not mentioned) passed a resolution sorrowfully condoling the "sad and untimely death of Dr. Manas Kumar Roychoudhury" and extending its heartfelt sympathy to the members of his bereaved family. It was further resolved to form a Dr. Manas Kumar Roychoudhury Memorial Committee to find suitable ways and means to commemorate his memory.

CHITALDROOG BRANCH—A meeting was held on 26-4-58, Dr. L. M. Rajagopala Rao presiding. Dr. S. V. Rama Rao, Family Planning Officer, Ramanagram, gave a lecture on Family Planning. Many took part in the discussion, which was followed by a film on the subject.

COIMBATORE DISTRICT BRANCH—A meeting and a picnic was held at Tiroomurthi Hills on 2-2-58. Before proceeding there members, numbering about 80, assembled at Amaravathi Project where a dinner was arranged by Dr. C. S. Srinivasan. At the destination a buffet tea was arranged. Dr. D. Sundareswaran, Vice-President presided at the meeting. He spoke on his experience in medico-legal cases.

A meeting was held on 23-2-58. Dr. A. G. Leelakrishnan, Vice-President, Madras State Branch, presided in the absence of President and Vice-President.

A resolution was adopted urging appropriate authorities to exempt nursing homes, dispensaries, clinics, x-ray establishments and pathological laboratories from the operation of electrical current cut. Dr. K. R. Venkatesalu gave an interesting lecture on Intramedullary Fixation of Fractures. The President in his concluding remarks spoke of the limited scope available for trained and advanced personnel.

A meeting of the Branch was held on 5-3-58, Dr. T. V. Sivanandam presiding. The President introduced the speaker of the day Dr. A. S. Mannady Nair, Additional Medical Adviser, India House. He explained the working of the National Health Service of the U.K. The scope for Indian doctors, abroad, he said, was very promising.

The 33rd Annual General Body meeting was held on 27-4-58. About 150 members were present. Dr. T. V. Sivanandan was in the chair. The annual report and the statement of Accounts presented by the Secretary were unanimously adopted. The following office-bearers for 1958 were elected: President—Dr. T. V. Sivanandan; Vice-President—Dr. D. Sundareswaran; Hony. Secretary—Dr. S. G. Rajarathnam; Associate Secretary—Dr. C. N. Santhanam, Hony. Treasurer—Dr. C. V. Ramaraj; Representatives to Central Council—Dr. N. K. Sampath, Dr. C. Arumugham.

Dr. R. G. Krishnan, Dean, Government General Hospital, Madras, addressed the members on Urinary Fistulae in Women.

The meeting then adjourned for sport. A varied programme was highly enjoyed by the ladies and gentlemen present.

Dr. V. Thayumanaswamy, Director of Medical Services, who was welcomed by the President at the outset, distributed the prizes. After a recess there was a dinner.

A meeting was held on 17-5-58, Dr. T. V. Sivanandan presiding. Some 90 members were present. Dr. K. Ramachandran of Government Erskine Hospital, Madurai, gave a talk on Some Paediatric Surgical Emergencies, especially Congenital Pyloric Stenosis Imperforate Anus.

CUTTACK BRANCH—An emergency meeting was held on 17-5-58 with Dr. K. N. Misra in the chair, 22 members attending.

After discussion a resolution was adopted that the Branch "viewed with concern that enquiries are being conducted by non-technical personnel into some allegation against some medical persons in the S. C. B. Medical College Hospital. As such this Association condemns the procedure of investigations of alleged professional errors by non-professional persons and resolves that a technical commission be set up" and that "no punishment whatsover be inflicted on the persons concerned till they are found guilty by the expert commission." It was also resolved to send a copy of the resolution to the Chief Minister, Health Minister, State Branch, etc. It was further proposed to send a deputation from the Branch and the personnel was decided upon.

DHAKURIA BRANCH—At the general meeting held on 27-4-58 resolutions viewing with alarm "the nuisance created by open kutcha drains all round Dhakuria" and urging the Calcutta Corporation and the government "to take immediate steps to remove this nuisance; appealing" to the water supply committee for the immediate increase of scanty water supply in the locality; and noting "with concern the continuance of outbreak of cholera in the city"; and offering continuation of help and co-operation in combating the outbreak, were passed.

HAJIPUR BRANCH—The Branch observed the Health Week from 10th to 16th March 1958. The celebrations, inaugurated by the S.D.O. of Hajipur, included, I.M.A. flag hoisting, Boy Scouts Rally, Baby Show, a village meeting and several public lectures, cinema shows on health subjects, and health examination of school children. Refresher Course lectures were given by Dr. S. M. Nawab, President of the Bihar State Branch, who spoke on Common Fractures and by Dr. Lala Surajnandan, who spoke on Infantile Diarrhoeas. During the week about 1,200 persons were vaccinated as a measure of health drive.

HASSAN BRANCH—A clinical meeting was held on 31-5-58, Dr. S. K. Viswesvar presided. Forty-two mem-

bers attended. Dr. M. S. Hahkri gave a talk on Transplantation of Cornea. Dr. T. Manikam gave a talk on Deafness of the Ear.

HAZARIBAGH BRANCH—A meeting was held on 10-5-58 with Dr. Miss E. M. H. Scott in the chair.

It was resolved that disinfection of wells and tanks whose water is used for drinking purposes should be started immediately, the sale of cut fruit and exposed sweets should be stopped and the chairman of the Municipality should be requested to appoint an inoculator for mass inoculation. It was further resolved to request the Asst. Municipal Health Officer to prepare cinema slides for publicity against the cholera epidemic.

It was resolved that the Hon. State Secretary be requested to send refresher course lecturer to Hazaribagh free of cost.

HOOGHLY - CHINSURAH - CHANDERNAGORE BRANCH—At the general meeting of the Branch held on 2-5-58, under the presidentship of Dr. Mani Mohan Mookherjee, a resolution condoling the death of Dr. Jogeswar Sreemany, a founder member and late President of the Branch, was moved from the chair and carried *nem. con.* all standing in silence for two minutes.

HYDERABAD BRANCH—The members of the Branch paid a visit to the Primary Health Centre at Ramachandrapuram on 13-4-58. Excellent arrangements were made for the reception of the members. Members showed keen interest in the activities of the Centre. The museum attached to the Centre proved very interesting. Later the members visited the village development block at Ramachandrapuram. The members offered some suggestions for the improvement of protected water supply and sanitation. Also visited was the poultry farm at Patancheru the working of which much impressed the members. Dr. K. Rangacharyulu, President of Andhra Pradesh Branch, and other office-bearers of the Pradesh and local Branches were among the party.

JADAVPUR BRANCH—The members of the Branch and the medical staff of the Kumud Sankar Ray Tuberculosis Hospital at a meeting in April recorded their deep sense of sorrow at the sad and untimely death of Dr. Manas Kumar Roy Chowdhury.

JAMURIA BRANCH—At a meeting of the Branch on 26-4-58, a resolution condoling the sad accidental death of Dr. B. K. Mookerjee was adopted. Dr. J. C. Chatterjee was in the chair.

JHALAWAR DISTRICT BRANCH—At a meeting on 24-5-58 under the presidentship of Dr. D. P. Shrivastava, a resolution was passed that the Governments of all States be requested to recognise the Journal of the Indian Medical Association for advertisement of vacancies of medical officers falling under their control and that the rule should also be applicable to semi-government bodies, district boards, municipal corporations and private bodies.

KARIMNAGAR DISTRICT BRANCH—A monthly meeting (date not mentioned) was held under the presdency of Dr. Gulam Nabi. A farewell party with an At Home was also arranged for outgoing members.

Dr. Gulam Nabi narrated an interesting medico-legal case. The Medical Officer, Sircilla (name not mentioned), narrated a case of snake-bite. A discussion followed in which all joined.

KARNAL BRANCH—A social meeting was held on 6-4-58. Dr. K. C. Wohra read a paper on Healing as an Art.

MADRAS CITY BRANCH—The executive committee met on 24-1-58. The Vice-President Dr. K. Rama Rau took the chair. Later the President Dr. P. Alagasingari arrived and presided at the request of the chairman. Statements of the accounts were read and recorded. The question of a plot for a building of the Branch was discussed and the secretary was asked to go into the matter with the help of Executive Committee members. Another resolution was adopted inviting the Madras State Branch to hold its next annual conference at Madras. Four members' names were removed from the rolls.

The Annual Report of the Branch for 1956-57, says that membership stood at 441 on 30-9-57. New members enrolled were 34. During the period under review there were 5 special general body meetings, 8 Executive Committee meetings and 12 clinical meetings. An annual dinner by subscription was introduced for the first time. A sum of Rs. 17,255/- was earmarked for the Building Fund.

MADRAS STATE BRANCH—The annual meeting of the Council of the Branch was held at Coimbatore on 23-11-57, under the presidency of Dr. M. Santosham. Fortyeight members were present.

A resolution condoling the death of Dr. K. Ramaswami (Tirunelveli Junction), Dr. S. N. Rangachari (Kodaganallur) and Dr. K. Rajam (Fort, Salem) was adopted.

Dr. C. Arumugam (Coimbatore), Dr. V. Vijayaraghavan (Madras) and Dr. C. N. Santhanam were reelected without contest as Hony. Secretary, Hony. Joint Secretary and Hony. Treasurer respectively. Dr. Y. P. Vasudevan and Dr. M. Santoshan were elected as State Representatives on the IMA Working Committee, with Dr. C. Nathamuni Naidu and Dr. S. Venkatesan as alternate representatives.

The Council adopted the audited statements of accounts and the Auditor's report for 1956-57 without discussion. The budget for 1957-58 as presented was approved.

A sub-committee for the Madras State Branch on the medical part of the Second five-year plan was reconstituted with Drs. M. Santosham, D. V. Venkappa and K. C. Nambiar, with Dr. Santosham as convener.

MADURA BRANCH—The 30th anniversary of the Branch was celebrated on 1-3-58 with a full-day programme under the presidentship of Dr. M. Venkatachalam Chettiar. In the forenoon a symposium was held on Investigation and Treatment of Congenital Cyanotic Heart Disease, Dr. T. S. Chelvakumaran and Dr. Reeve H. Betts participating. Lunch was given by the South Indian Manufacturing Co. In the afternoon Dr. A. K. Joseph gave an address on Recent Advances in Midwifery. W. T. Suren & Co. provided tea. In the evening Dr. B. L. M. Murthy Rao addressed the members on Tranquillisers. Dinner was given by East India Pharmaceutical Works. Atlantis & Co. and Eli Lilly screened films.

MEERUT BRANCH—The general meeting of the Branch was held on 27-2-58, with Dr. J. L. Caroll in the chair. Dr. R. S. Seth spoke on Pain in the Ear. Dr. G. D. Agarwal demonstrated a case of Clastoma. Dr. Caroll, the President, thanked the speakers. The Secretary introduced a new member to the House. Twentyseven members were present.

An emergent meeting was held on 4-5-58, Dr. J. L. Caroll presiding. Attendance was 50, including invitees —the chairman and members of the Municipal Board, Municipal Health Officer and Sanitary Inspectors.

The President explained the object of the meeting. The chairman of the Municipal Board had sought the co-operation of the medical profession to improve the sanitation of the town. It was the doctors' duty to cooperate and as the problem was a big one, they should start with an "anti-fly" campaign.

Pt. Gopi Nath Sinha, chairman of the Municipal Board, in his speech earnestly requested the members to extend their co-operation and undertook to carry out the doctors' recommendations as far as possible.

The Hony. Secretary, Dr. Ujagar Singh assured full co-operation on behalf of the members. He suggested there should be a Central Health Committee which should work for the improvement of sanitation and for the education of the public. There should be 3 committees for each mohalla, in all 45 sector committees, which should look after each sector and send their suggestions and comments to the Central Committee.

MONGHYR BRANCH—At a meeting on 5-2-58 under the presidentship of Dr. B. N. Banerji, a committee was

formed for the proper observance of the Health Week (10-16 March) with Dr. B. N. Banerji as chairman and Dr. Kapildeo Prasad as secretary.

The Health Week celebratons began wth a show of physical feats and a public meeting, presided over by Dr. D. K. Dutta. Child health survey in selected mohallas and the opening of a health exhibition was the second day's programme. Mass contact was launched on the third day at Tarapur about 34 miles from Monghyr. The meeting was inaugurated by Sri B. N. Roy, M.L.A., and presided over by Sri J. S. Sastri. Speakers included several doctors. A Baby Show in which about 500 babies took part was held on the 13th. The next day all pupils in a school were examined. The last two days were devoted to child health survey work.

An emergent meeting was held on 5-4-58, Dr. B. N. Banerji presiding. Circular No. 24/57-58 of the Central Office was considered and it was resolved to reject the proposals as it was considered that "such discrimination is apt to create dissatisfaction and disruption amongst the members."

A meeting was held on 13-5-58. Dr. B. N. Banerji presided. Nominations were made for president and vice-presidents for the Centre and the State Branch for 1958-59.

A meeting was held under the presidency of Dr. B. N. Banerji on 28-5-58. A film show of medical and surgical interest was given by Messrs. Squibb.

NELLORE BRANCH—A meeting was held on 17-5-58, Dr. S. R. Singh presiding. Dr. P. K. Krishnan Kutty of Madras delivered a talk on Coronary Sclerosis.

A resolution was passed that "the Director of Medical Services, Andhra Pradesh, be informed that the scale of pay offered to assitant surgeons in his circular is so low and meagre as to recommend to the members to consider joining service" and that the scale be raised to Rs. 350-25-600 excluding allowances, a scale which it was learnt had been accepted by the West Bengal Government.

RAJASTHAN STATE BRANCH—At the annual meeting of the Branch held at Jaipur on 20-4-58 the following office-bearers for 1957-58 were elected: President—Dr. B. N. Sharma; Vice-Presidents—Dr. C. M. Sharma, Dr. S. D. Arya, Dr. N. A. Cowasji; Hony. Secretary—Dr. Tara Shankar Mathur; Joint Secretaries—Dr. G. D. Parikh, Dr. Gyan Prakash, Dr. B. S. Chauhan; Hony. Treasurer—Dr. B. P. Bhatnagar; Representative to Central Working Committee—Dr. D. G. Ojha, Dr. P. L. Rishi (alternate).

RAMNAD (RAMANATHAPURAM) DISTRICT BRANCH—The 27th annual meeting of the Branch was held on 23-2-58 at Rajapalayam, Dr. T. Muthusamy presiding. Dr. G. Victor of Madurai Medical College spoke on Modern Trends in Medical Therapeutics. Dr. A. K. Joseph also of Madurai Medical College spoke on Modern Obstetrics and the General Practitioners. The following office-bearers were elected: President—Dr. Raju Iyer Srivilliputtur; Vice-President—Dr. T. Muthusamy; Secretary—Dr. S. Radhakrishnan; Representatives to State Council—Dr. L. R. Marthandam, Dr. Jeyabelraj; Representative to State Council—Dr. Natchippa Ramasamy.

The 27th annual report of the Branch shows that there were 6 meetings in the year under review, 1956-57. There were 42 members on the rolls.

A meeting presided over by Dr. Raju Iyer was held on 1-6-58. Dr. C. Anbunatham gave a talk on Chest Pain.

SALEM BRANCH—At the annual General Body meeting of the Branch held on 29-3-58 the following office-bears for 1958-59 were elected: President—Dr. S. Krishnamoorthy Rao; Vice-President—Dr. M. B. Yuvaraj Singh; Hony. Secretary—Dr. (Capt.) V. Raghavendra Rao; Hony. Joint Secretary—Dr. T. Narayanaswamy; Hony. Treasurer—Dr. K. V. Dhanakoti Nayudu; Representative to Central Council—Dr. K. R. Hariharan; Alternate Representative—Dr. T. S. Shanmukhasundaram.

SHILLONG BRANCH—A public meeting under the auspices of the Branch was held at the Raj Bhavan on 7-4-58 on the occasion of the World Health Day. Shri K. P. Tripathi, Minister, Assam Government, presided. Speakers included: D. J. Earle and B. Mcphail of WHO; Dr. U. C. Baradaloi, Prof. G. G. Swell, G. S. Bhattacharyya, M.L.A., Rajyaratna S. V. Mukherjee and Dr. R. A. Hughes.

On 19-4-58 Dr. Panchanan Chatterji addressed the members on Surgical Dyspepsia and elaborated on recent advances in this respect. An interesting discussion followed.

SHIMOGA BRANCH—A meeting was held on 26-4-58. The chair was occupied by Dr. H. K. Srinivasa Murthy who addressed the members on Preventive Orthopaedics. Other subjects discussed were: Sickle-cell Anaemia—a case report by Dr. D. Krishna Murthy; Intestinal Obstruction—a case report, and Gastric Carcinoma treated by Gastrectomy—a case report by Dr. A. S. Kanthraja Setty; Dislocation of the Hip—a report on three cases by Dr. M. Punyamurthy.

A monthly meeting was held on 17-5-58, Dr. B. Sirsi presiding. Before taking up the work of the meeting two minutes' silence was observed, all members standing, to pay homage to the memory of late Dr. T. Seshachalam and Dr. V. V. Monteiro.

A talk on Leukaemias was given by Dr. J. B. Chatterjee of the School of Tropical Medicine, Calcutta. Dr. B. M. Thippeswamy demonstrated a case of Leukaemia. A discussion ensued.

SOUTH ARCOT BRANCH—A meeting was held on 22-3-58 at Chidambaram. Dr. K. S. Sanjeevi of Madras Medical College spoke on The Practice of Medicine.

A meeting was held on 19-4-58 at Cuddalore. Dr. N. S. Ramakrishnan of Madras gave a talk on the Chemotherapy of Non-pulmonary Tuberculosis.

SURAT BRANCH—At the annual meeting held on 26-9-57 the following office-bearers for 1957-58 were elected: President—Dr. S. P. Bhacca; Vice-President—Dr. R. N. Dixit; Secretary—Dr. N. T. Mascati; Treasurer—Dr. G. N. Dholabhai; Representative to Central Council—Dr. H. B. Bhatt.

During the course of the year 10 regular and 2 additional meetings were held according to the annual report for 1956-57. At eight of the regular meetings the following talks were arranged: Treatment of Leprosy by Dr. K. H. Haradwala; Cardiovascular Emergencies by Dr. D. C. Sheth; Prevention of Filariasis by Dr. S. T. Pandya; Irregular Vaginal Bleeding by Drs. Miss N. C. Tijoriwala and Mrs. S. N. Vora; Common Eye Diseases in General Practice by Dr. N. T. Mascati; Influenza Epidemic by Dr. R. K. Desai, Dr. D. C. Sheth and S. T. Pandya; Fifty Years of My Medical Career by Dr. C. J. Ghia; Tuberculin Treatment of Pulmonary Tuberculosis by Dr. G. Talwalkar. At the other 2 ordinary meetings films of medical interest were shown by courtesy of Squibb & Co. and Ravison Pharmaceuticals Ltd.

The two additional meetings held in July and August 1957 were addressed by C. S. Thakkar, President of I.M.A., and Dr. R. N. Cooper of Bombay.

According to the annual report, the members played important roles in combating the influenza and cholera epidemics in the city in co-operation with local municipal authorities.

TIRUCHI BRANCH—A meeting was held on 22-3-58, Dr. L. S. Ramachandran presiding. Dr. T. V. Ranganathan gave a talk about his visit to U.K. and Europe. Dr. K. Ramachandran spoke on Surgical Aspects of Chronic Splenomegaly. Many took part in the discussion that followed.

Another meeting was held on 25-4-58, with Dr. L. S. Ramachandran the president in the chair. Dr. T. S. Chelvakumaran of Madurai Medical College, gave a talk on the Development of the Pharynx and Pharyngeal Derivatives. This was followed by the usual discussion.

modern hospital planning

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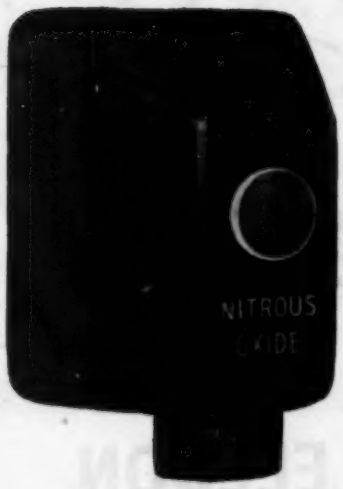

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The 35th Annual Conference of the Indian Medical Association will be held at Cuttack, Orissa, during the last week of December, 1958. The conference will be attended by about 2000 delegates and distinguished visitors from all over India.

A Souvenir will be published to commemorate this happy occasion and about 4000 copies will be distributed.

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Printed by SRI TARANI KANTA BASU at SRI GOURANGA PRESS PRIVATE LTD., 5, Chintamani Das Lane, Calcutta-9 and published by him on behalf of the Indian MEDICAL ASSOCIATION from 23, Samavaya Mansions, Corporation Place, Calcutta-13.
Editor—DR. P. K. GUHA, M.B., M.R.C.S. (ENG.), D.O.M.S. (LOND.)

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